



FRIDAY, DECEMBER 11.

THE LATE WM. H. VANDERBILT.

William H. Vanderbilt was the eldest son of Commodore Vanderbilt. He was born in New Brunswick, N. J., in the old hotel which the Commodore kept at that period of his life, on May 8, 1821. His father gave him an ordinary education in the Columbia College Grammar School. Here he devoted himself exclusively to the practical and business branches of study, displaying in the process of gaining his education nothing approaching brilliancy, or even indicating any particular talent for any special branch of business. He studied faithfully, and when at the age of 18 he had completed the practical course of the school, he was just as well prepared to embark in the struggle for fortune as the average boy, and no better. In later years Mr. Vanderbilt often expressed regret to his intimate friends that his earlier education had not been more broad and thorough, and regarded himself as a self-made man, so far as his higher tastes for art were concerned.

Equipped, however, as he was, he entered at the age of 18 the office of Dean, Robinson & Co., which was then one of the largest banking houses in Wall street. As a clerk there he took his first lessons in the business. His father had always considered him a common-place boy, giving no promise for the future, and he had told him so at various times during his boyhood days. William had always received these cheerful paternal compliments in silence, but they awakened in his breast an ambition to show his father that he was mistaken. He worked hard from early morning often till late at night, and mastered the details of the business of the firm with wonderful rapidity. His employers soon saw that he was no ordinary clerk, and his industry and energy were rewarded by approving comments, and, what was much more to the purpose, by the substantial recognition of promotion. The salaries of those days would astonish the banking clerks of the present time. The man who was to control the greatest wealth of any person in the world was working at the time spoken of in a most responsible position for the munificent sum of \$16 a week. The old Commodore, though quite wealthy at that time, made no allowance to his son, and he was forced to depend upon his salary solely for his living. It was large enough, William thought, to justify him in assuming the additional responsibility attaching to the maintenance of a wife, and in 1841, after two years of hard labor at his desk, he was married to Miss Kissam, the daughter of a Brooklyn clergyman, a cultured, Christian lady of many sterling traits of character. Her influence in sustaining her husband in his early struggles was potent for great good, and Mr. Vanderbilt attributed much of his courage at this period of his history to her cheerful, womanly help.

The young couple began their wedded life in poverty. William did not have money enough saved to furnish a home, and so he and his wife boarded in East Broadway, which was then a very good part of the city, living contented and happy on his salary of \$16 a week. The young husband worked harder than ever, and daily rose higher and higher in the esteem and confidence of his employers. The firm was seriously discussing the advisability of making him a partner in the house, when he was obliged to give up his indoor work on account of the failure of his health. He was a delicate young man, and the hard work he had done proved too much for his constitution. He had a natural taste for a farmer's life, and his father, realizing that unless he did something for his son he would sink into an early grave, purchased for him a little farm at New Dorp, Staten Island, and told him to make the best of it.

William and his wife accepted the Commodore's gift without his blessing, and at once took possession of the little home-stead. This was in 1842, and Mr. Vanderbilt had just turned his twenty-first year. The farm consisted of 70 acres of unimproved land, and the young man, aided by his willing wife, undertook without previous education or experience for the calling a business which required patience, sagacity, economy, and untiring labor to insure success. Few men of his age would have had the courage to leave a banker's desk to grapple seriously with the responsibilities and difficulties of such an undertaking, and still fewer would have overcome the obstacles and succeeded. But he was among the first to begin work and the last to leave it: he directed the whole, but permitted nobody to do more labor than himself. The result was that the wastes and barrens of the little farm were soon transformed into a blooming garden, and Mr. Vanderbilt's 70 acres began to return him a good income.

He was ambitious, however, to enlarge the field of his operations, and something more than thrift, endurance and untiring labor were necessary to do this. It required capital, and of this, Mr. Vanderbilt, the unfavored son of a father worth millions, had none. He determined to apply to the Commodore for a loan of \$5,000. He thought that the improvements which he had already made on the property would stand with the old gentleman as solid proofs of both his earnestness of purpose and industry, and these might plead for him. He dared not speak in his own behalf, however, but he requested a friend of the Commodore to intercede for him. The answer was a curt refusal, and the young farmer had nothing left to him but to give up his ambitious projects or to mortgage his farm. He preferred to give up the mortgage, and he obtained from some person \$6,000 and went on with his improvements. Six months passed by. William had 350 acres under cultivation, and the Commodore had apparently taken no notice of his son's effort. The father was at all times surrounded by voluntary spies, however, who tried to make themselves useful and agreeable to him by reporting all that they knew of the members of his family, as well as outsiders connected with him in any way. One of these spies found out all about the young farmer's mortgage transaction and reported the facts to the father, who, in the meantime, had become aware of the improvements which were being made at the New Dorp farm, and must naturally have known that his son had obtained money in some manner. He asked no questions, however, but one afternoon when William called on him he took him out driving and delivered to him on the road a speech to the following effect:

"You don't amount to a row of pins anyway. You won't never be able to do anything but to bring disgrace upon yourself, your family, and everybody connected with you. I have made up my mind to have nothing more to do with you."

The father paused for a moment, and then suddenly launched this question at his astonished son: "Did you not

mortgage your farm for \$6,000?" The son answered submissively that he had, and that he was obliged to do it, for the farm required considerable investment, and he had no money. "The transaction," he said, "is perfectly business-like. I undertook to pay the mortgage off at a certain date, and I know I shall be able to do so. I cannot see that I have done anything to be ashamed of." The old man made no answer, and he was dumb for the remainder of the drive, but the next morning William received a check for \$6,000, with a peremptory order to pay off the mortgage "right away."

Mr. Vanderbilt always dated the change in his father's attitude toward him from this drive, and attributed it more or less to the incident of the mortgage. At all events, it was about this time that the relations of the Commodore to his eldest son began to assume a character of greater confidence and intimacy. The speedy progress of the improvements on the farm and the popularity which the young man had gained among his neighbors at New Dorp pleased the old man, and he began to think that "there must be something in the boy after all." The neighbors in the meantime had not been as slow as the father to find out that there was "something in" William H. Vanderbilt. The Staten Island Railroad, the existence and prosperity of which was of the utmost importance to the development of the island, had been well-nigh wrecked at this time by gross mismanagement. It was almost overwhelmed with debts and embarrassments, and finally it was decided by the creditors to put the property into the hands of a receiver. Mr. Vanderbilt had up to this period had no experience in the management of railroads, but he had shown himself a man of energy and business capacity, and by the unanimous suggestion of all the parties interested he was appointed Receiver of the bankrupt road. This was the beginning of his career as a railroad manager. The little Staten Island Railroad, without money, without credit, without materials and without organization, was the school from which the future railroad king was graduated. In two years he had paid off all the claims against the company, connected the road with New York by an independent line of ferry-boats and placed it upon a secure financial basis. He was then made President of the company, and he continued to administer its affairs successfully until called away to take charge of his invalid brother George, a young army officer, on a two years' vain search for health in Europe. On his return, after his brother's death, he seems to have secured the full confidence of his father, who made him Vice-President of the New York & Harlem Railroad, with which his oldest son Cornelius, the favorite grandchild of the Commodore, had already been connected for some time. This was in 1864, and from that time on he was his father's Lieutenant in his great railroad operations.

In 1865 he became Vice-President of the Hudson River Railroad Co., and its active executive officer, so far as that was possible under the old Commodore, who was not in the habit of leaving much to the discretion of those under him. When the Hudson River and the New York Central were consolidated, Wm. H. became Vice-President of the consolidated company, and was known as, under his father, the head of the great system of "Vanderbilt roads," which shortly after included the Lake Shore west of Buffalo.

When Commodore Vanderbilt died in 1877, the public was not surprised to learn that the bulk of his great fortune was left to this son who had been helping to manage it for some twelve years previous, under whom the Vanderbilt railroad system has continued to grow, though the accessions have been largely for purposes of defense of late years. The first important acquisition under the late Mr. Vanderbilt was the Michigan Central, which was afterwards united with the Canada Southern to make a system between Buffalo and Chicago comparable with that of the Lake Shore Company, further south. This acquisition secured the New York Central an important feeder with which its relations had always been close, but which might at any time become the ally of a rival. The later purchase of the "Nickel Plate" road was a defensive measure, and seems unwise, not because it was not desirable as a part of the Vanderbilt system, but because more was paid for it than it was worth, and probably twice as much as it would have cost if it had been left to its own devices (like the West Shore) for a year or two. The large investments in the Northwestern have not made it a part of the "Vanderbilt system" in the sense of the lines east of Chicago, as it interchanges traffic freely with all the Chicago roads, and is not exclusively a feeder of the Vanderbilt roads. The Cleveland, Columbus, Cincinnati & Indianapolis is not entirely controlled by the Vanderbilt interest, but it interferes with their chief connection with Cincinnati, Indianapolis and St. Louis, and of late years has been given more complete control of St. Louis traffic. The latest acquisition, the West Shore road, secured but two days before Mr. Vanderbilt died, was obtained purely for defense. Meanwhile the Vanderbilt influence in the Western Union Telegraph Co., apparently predominate when the Commodore died, now seems to have ceased entirely.

In May, 1883, attention to details of management having affected his health, Mr. Vanderbilt retired from the presidency of his three great companies, remaining a director of each, and their organization was modified, the office of chairman of the board of directors being created. An active railroad manager was made president of each company, and Mr. Vanderbilt's eldest son, Cornelius, whose experience as a railroad man had been longer than his father's, was made Chairman of the New York Central and Michigan Central boards, and his second son, Wm. K., who had been a Vice-President of the New York Central in charge of traffic, became Chairman of the Lake Shore board. Nominally, Mr. Vanderbilt has not been an active railroad manager since: but as the owner of a controlling interest in these great companies he has necessarily been much consulted and has doubtless largely dictated their policy.

Mr. Vanderbilt is supposed to have inherited something like \$100,000,000 from his father, and to have left a fortune of nearly twice that amount, the increase being largely the advance in the selling price of securities due to the general fall in the rate of interest, so that a long 6 per cent bond worth par in 1877 may bring more than 120 now. These estimates may be far out of the way, but it is probably true that he was the richest man in the world.

The shares inherited from his father and supposed to form the larger part of his wealth at that time, have yielded very little income during the past year; but his holdings of New York Central were certainly very much less than formerly, and he may have also sold largely of the other stocks before their great decline, which he should have been able to foresee, in part. Indeed, it is by no means certain that Mr. Vanderbilt or his family have for some time owned a controlling interest in any of his companies. They could exercise it without owning it; for, in the first place, they were generally credited with owning it, and, in the next place, other holders felt and feel that any attempt to change the control would reduce the price of their shares in the market.

Mr. Vanderbilt leaves a widow and eight children, four sons and four daughters. His sons are Cornelius, William K., Frederick W. and George. The daughters are Mrs. W. Seward Webb, Mrs. Elliot F. Shepard, Mrs. Hamilton McK. Twombly and Mrs. William D. Sloane. The three elder sons are officers of the various Vanderbilt railroads. George, the

youngest, is said to have very strong literary tastes, and so far is not known as a business man. All the sons have been trained from youth for railroad management, and in that particular have much the advantage of their father. The two elder ones have conducted important railroad affairs for years, and have won the respect of the railroad community with whom they have had dealings, including some of the ablest railroad men in the community.

The following appreciation of Mr. Vanderbilt was given by Mr. Depew, many years closely associated with him and now President of the New York Central Co., in answer to an inquiry by a reporter of the *New York Times*:

"Mr. Vanderbilt," said Mr. Depew, after a few moments of reflection, "was fair, frank, and blunt in his methods of presenting his views. If you failed to understand him, he might be offended. He often opposed himself to you in a discussion, and argued with great vehemence solely for the purpose of making you express your views fully. With all his money, and the knowledge of its power, he had none of the pride of opinion. He preferred to discuss matters with his friends and thoroughly ventilate them before acting. He was a capital judge of men and what they were fit for, and he rarely made a mistake when he knew his man. When he had confidence in a man he always gave him large discretionary powers and held him responsible rather for the results than for the details of his work. He was a very approachable man. While he did not attempt to get at things by regular and logical processes, he had inherited his father's faculty of jumping to shrewd conclusions. He did not like to have those associated with him with him to please him by their expressions of opinion. He wanted them to speak their minds freely. His frequent remark would be, 'Now, what I want is, not what you think I want, but what you think yourself.' The men about him who were frankest in their expression of their views, whether agreeable or disagreeable, were those who had the strongest hold on him. One of the secrets of his power in managing his companies was the fact that a strong man who knew himself and his ability to perform the work assigned to him never had the slightest fear that from anything that might be said or done by any one he would be disturbed or lose his place or made to suffer in any way. The great trouble of many corporations is that their men expend one-half of their will power in trying to keep their places. There was none of that under Mr. Vanderbilt. He had a hearty way of greeting every one. He had a way of shaking hands and saying, 'How are you, old fellow?' that would often do more to inspire fidelity on the part of an employe of one of his corporations than the doubling of the man's salary. If you ask me for a summary, I should say that the strength of his dealing with men under him was a deep sense of justice."

Car Shop Notes in Boston.

THE SALEM SHOPS.

The car shops of the Eastern Railroad are situated at Salem, Mass. This road is now leased by the Boston & Maine, and the name of the latter road is being placed on all the cars which are being renumbered. The shops are, however, being improved and enlarged, the machine shop being extended to admit of wheels and axles being fitted up at Salem instead of East Boston.

The repairs during the past year have been heavy and but little new work has been done. Some combination baggage and smoking cars are in course of construction, and a lot of 25 box cars have just been finished, and some hay cars will shortly be begun.

The combination baggage and smoking cars are of the following general dimensions:

Length outside sills.....	53 ft. 0 in.
Width " "	9 ft. 6 in.
Weight complete.....	54,000 lbs.
" each truck.....	9,000 lbs.
Wheel base each truck.....	7 ft.
Diameter wheels (chilled).	33 in.
Axles, pedestals, etc.	M. C. B. standard.
Size of windows.....	20 in. X 32 in.
" clearstory.....	6 in. X 21 in.
Seating capacity.....	38 persons.

The seats are covered with dark red leather, a very suitable material for a smoking car, and are made to tilt, Henry's patent being used. Curtains, with the Hartshorn roller, are used instead of blinds, rubber stops being riveted to the bottom of the curtain to prevent it flying out of reach when it runs up. The Baker heater and the Judkins electric train signal are used, and are being fitted to the whole of the passenger stock. The body of the car is very strongly framed, and both the roof and floor have an extra sheathing, which somewhat increases the weight. The windows are of $\frac{1}{2}$ -in. French plate glass.

The portion devoted to passengers is 31 ft. long inside, and is lighted by five lamps attached to the sides of the clearstory. The light being thus brought nearer to the passenger, the car is better lit than when the lamps are in the centre of the clearstory as usual. The interior finish of the car is in cherry and oak, the latter being used in sunk panels ornamented with incised gilt leaves.

Two sets of life saving tools are provided, one set being placed inside the car, protected by a locked glass door, and the other set being placed underneath the car in a plainly lettered case. The cover of this case is nearly sawn through, so that it can be easily forced open to obtain the tools when required.

The trucks are very strongly framed, the sills and bolsters being plated and the truck put together with a special view to secure strength and durability. French's springs are used. The head lining has a light blue ground ornamented with gilt and red. The exterior of the car is painted yellow, with black and red striping.

The Westinghouse automatic brake is used.

The freight cars have end doors for carrying lumber. The posts are not mortised into the plate and side sills, but rest in cast-iron sockets. Diamond trucks are used, the brake being hung from the car and applied to one truck only. The United States car coupler is used and is being rapidly applied to all the freight cars of the road.

THE FITCHBURG CAR SHOPS.

The Fitchburg car shops are situated in Charlestown, about one mile from the Boston terminus of the road. The shops were built many years ago, and are not only very small but of irregular and inconvenient shape, being hemmed in on all

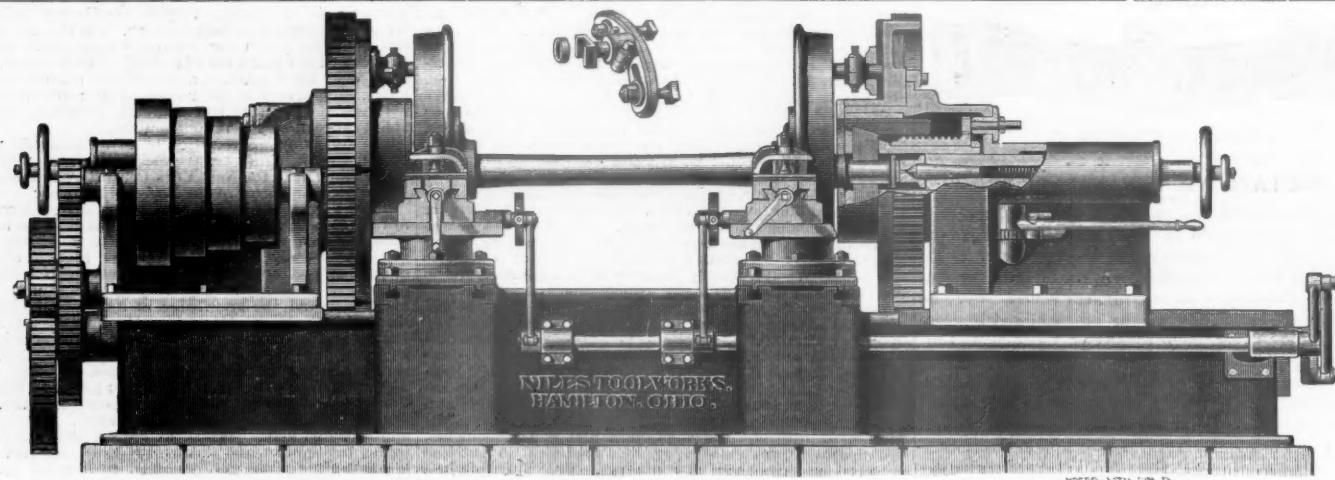


Fig. 4.
TURNING STEEL TIRED CAR WHEELS.

sides by the running tracks of the Fitchburg and other roads. New shops have long been contemplated, and certainly appear to be needed. Smaller car shops for local repairs are situated at North Adams, and at Fitchburg, where some 20 men are employed.

Four combination baggage and smoking cars have been lately begun, but with this exception the only work on hand consists of repairs.

The Marden brake beam, of deck beam section, is now in extensive use on the line, and in conjunction with malleable iron brake-block heads makes a light and neat, though strong brake rigging.

Mr. J. W. Marden, the Master Car-BUILDER, has quite a number of different styles of steel-tired wheels running under his equipment. His experience is in favor of crucible tires and of 33-in. wheels, finding that the flanges of the smaller size wear less than those of 42-in. wheels.

Although a very cheap oil, costing only eight cents per gallon, is used in the journal boxes, little trouble is experienced from hot boxes. Great care, however, is taken to get good wool waste, Mr. Marden holding that the best oil is inoperative if the waste will not absorb the oil, and be sufficiently elastic to lightly press against the journal. Cheap waste often fails in these particulars, and hence the oil never reaches the journal at all, and the box necessarily runs hot.

Mr. Marden, after investigating the question of grinding car wheels, considers that it is economy to do so, and that it is useless to expect a grinding machine will also serve as a lathe for the steel-tired wheels. Two distinct machines have, therefore, been ordered, and will shortly be at work; a car wheel lathe for steel tires, and a grinding machine for chilled wheels. It is evident that the dust and grit from a grinding machine would be apt to impair the accurate fit of the working parts of a lathe, and the time consumed in changing the machine

from a grinding machine to a lathe would waste a considerable amount of time, and diminish the working capacity of the combination tool. Two separate machines, if not fully employed when first purchased, would be ready to meet inevitable future demands.

Turning Steel-Tired Car Wheels.

The adoption of steel-tired car wheels for passenger service has become so general that every improvement in detail by which their use can be rendered more economical becomes important. A well-constructed steel-tired wheel is practically indestructible in all parts except the tire, and is moreover exempt from sudden failure or fracture. As the tire is the only part subject to wear, the maintenance of steel-tired wheels involves little beyond the turning of the tires.

It is not, therefore, surprising that the importance of an economical and efficient method of turning tires is becoming apparent to all large users of steel-tired car wheels. The accompanying illustrations represent two of the latest and most approved methods of securing wheels in the lathe while being turned.

Figs. 1, 2 and 3 represent the latest method devised by the Allen Paper Car Wheel Co. for securing their wheels in the lathe while the tires are being turned.

The centre cylinder *C* is doweled and secured to face plate of lathe by bolts *D*. The clamp cylinder *E* has channels *F* and *G* cored entirely through, which admits of its being clamped to centre cylinder *C* in any position by bolt *H*. On its outer end is a flange *I* and lugs *K*, the latter being the same in number as the bolts in the wheel.

The sides of lugs *K* are formed by radial lines, and bear on the heads of bolts in the wheel. The lugs also bear against the wheel, and support it in a lateral direction. A socket

wrench may be used with advantage in clamping by means of bolt *H*.

The centre cylinder *C* answers for all wheels, but in driving 42-in. wheels, a second clamp cylinder is required having flange *I* of sufficient diameter to reach the bolts in the wheel.

For wheels on axles, the centre cylinder *C* should be longer than it is shown, or clamp cylinder *E* may be longer.

This apparatus can be cheaply made, as no finish is required, except to face and turn off the centre cylinder *C*, bore out the clamp cylinder *E*, and drill for holes.

Fig. 4 represents a method of turning steel-tired car wheels lately introduced by the Niles Tool Works, Hamilton, Ohio. After some careful trials, the makers consider this method to be a considerable improvement on any that have gone before. It will be seen that the mode of holding the wheel truly central is a considerable departure from usual practice.

The construction of the lathe is explained by the makers as follows:

"The head-stocks, instead of having revolving spindles, have heavy cylindrical noses projecting out from their faces. In these noses are located the boxes to receive the journals of the car axle. The face-plate revolves upon and outside of the nose, and nothing interferes with the free sweep of the driving studs which reach from the face-plates to the car axles.

"These journal-boxes, within the noses, are virtually heavy four-jawed chucks, whose jaws may be opened and closed, while the lathe is running, from the rear of the face-plates. The chuck-jaws have broad pads forming an adjustable journal-box which can be adjusted to any desired degree of snugness to any axle journal. These journal-boxes or chucks may remain stationary in the nose while the axle revolves within them; or the journal-boxes or chucks may be firmly tightened upon the journals and the chucks revolved within the noses. If the journal is nice and round it may be utilized as the bearing of rotation, while if it is in bad shape the truly cylindrical exterior of the chuck body may be utilized as the bearing of rotation. Each head-stock is also provided with dead centres for use when desired."

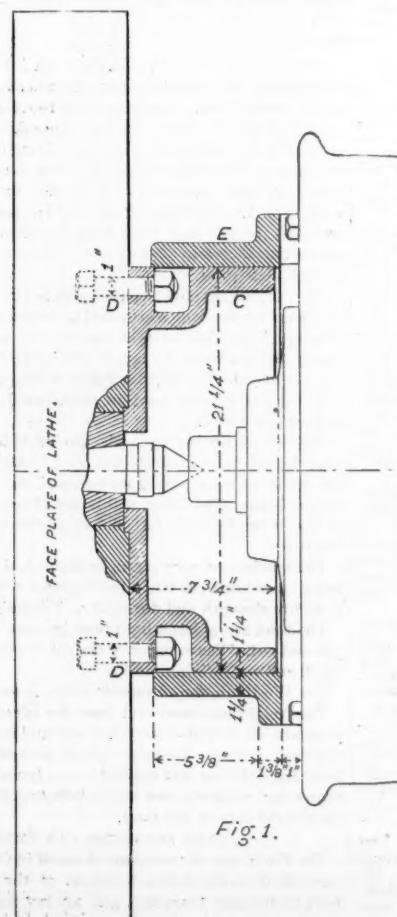


Fig. 1.

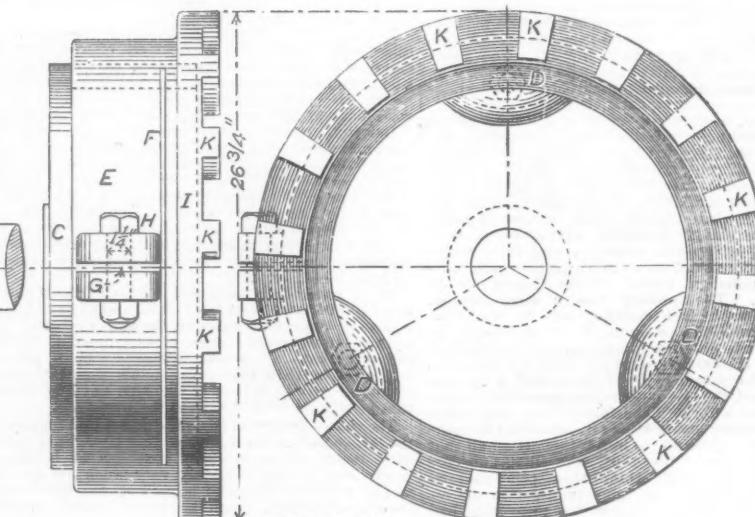
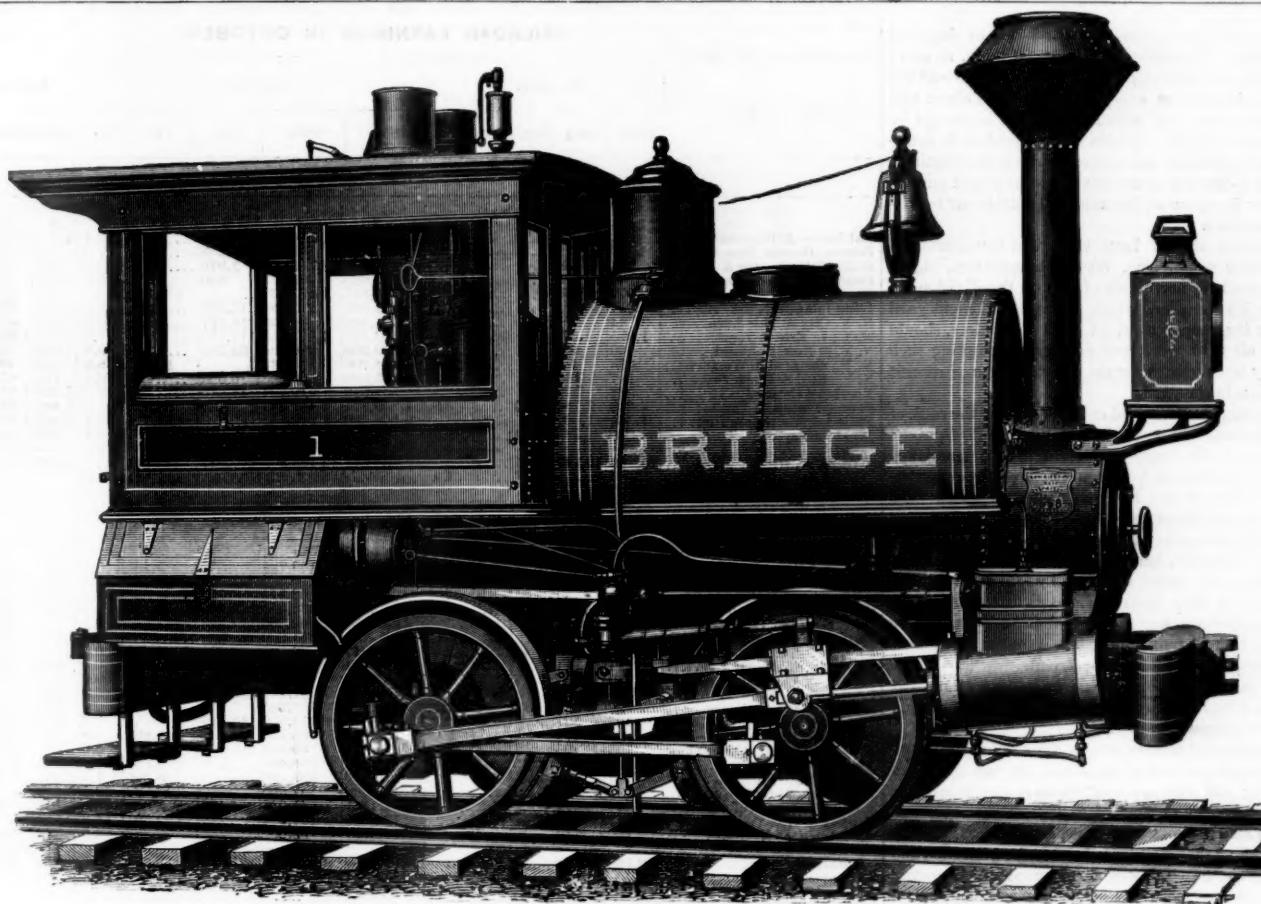


Fig. 2.



TANK LOCOMOTIVE FOR NEW YORK & BROOKLYN BRIDGE.

Built by H. K. PORTER & Co., Pittsburgh.

"When turning truck wheels the lathe thus furnishes facilities for turning work while carried upon dead centres; for revolving the work upon its own journals when they are in satisfactory shape; and for furnishing truly cylindrical substitute journals in case the journals are out of shape."

The left-hand head-stock is bolted rigidly to one end of the lathe-bed. The right-hand head-stock can be shifted upon the lathe-bed by means of a hand-lever provided with a ratchet and operating pinion which gears into a rack in the bed. When this head-stock has been adjusted in proper position it is secured. The ends of the car-axle then project their full length into recesses at the centre of the face-plates, and the head-stocks are closed up toward each other so as to bring the face-plates close up to the car-wheels.

Each face-plate has two drivers which engage bolt-heads or other projections upon the outside face of the car-wheel. These drivers are adjustable in length to suit different styles of wheels, and the distance between the face-plates is reduced as much as the presence of these adjustable drivers will permit. The drivers are adjusted radially upon the face-plates for different sizes of wheels, and their driving ends have jaws

very simple device. In this respect a spoked wheel has an advantage over a disk wheel.

Tank Locomotive for the New York & Brooklyn Bridge.

The accompanying engraving represents a small tank locomotive built by H. K. Porter & Co. in Pittsburgh for the New York & Brooklyn Bridge, and used there during its construction. It is of 4 ft. 8½ in. gauge, has 9 by 14 in. cylinders and 36 in. driving wheels, and weighs about 20,000 lbs. It is now used for switching passenger cars at the bridge terminus.

Eberhardt's Machinists' Emery Tool Grinder.

The accompanying engraving represents a machine tool grinder built by Gould & Eberhardt, of Newark, N. J. This grinder is constructed to meet the wants of the machinist and the machine shop. The builders have endeavored to remedy certain defects in other machines, and further to construct a grinder that can be used by any one, whether a skilled workman or a young apprentice. Even when used by unskilled workmen it is claimed that steel cannot be overheated or burnt.

The machine has a very large base, large spindle and long bearings. The construction of the machine is such that the wheel can be run in either direction to suit circumstances in setting the machine up. A large pump is provided with plenty of area around the wheel, etc., so as to keep the water from wetting the floor. The makers have aimed to make the machine strong and durable throughout. The wheel furnished is warranted with a special arrangement for feeding the water so as not to draw the temper. A truing-up device for the emery wheel is also attached.

The makers inform us that the machine is giving much satisfaction, and that in some cases as many as six of these grinders are in use in the same factory with very satisfactory results.

Contributions.

A Question in Bridge Construction.

ST. LOUIS, Mo., Nov. 25.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The question asked by your correspondent "M. J. B." in the *Railroad Gazette* of Nov. 30 is correctly answered by you in so far as it relates to long spans where the end post is of great length and large section. For shorter spans, however, the office of the "collision" strut is to support the end post at or near the point where it would be struck by the body of a derailed box-car or by projecting lumber from a car that had been carelessly loaded. In the examination of a number of wrecked iron spans the writer has found that quite a large percentage had been destroyed either from the breaking of the end-post by a direct blow, or from the shoving of the end-post off of the bridge-seat, this occurring through the buckling of the tie-bars of the end panels of the bottom chord. To guard against this class of accidents as well as the uplifting of the span from an accumulation of drift or ice at the bridge-seat during a freshet, in cases where the grade is close to the flood level, it is my practice to make the end panels of all short spans entirely of rigid or compressive members, as in the following sketch:

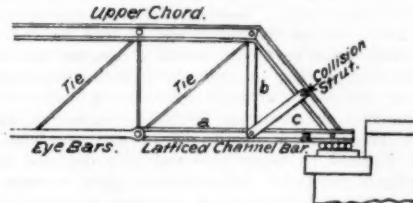


Eberhardt's Machinists' Emery Tool Grinder.

which engage the bolt-heads of the car-wheel. The engagement is not direct, however, as a circular collar is placed upon the bolt-head so as to afford a cylindrical bearing surface for the driver-jaws. These drivers need no adjustment after being once set for a given diameter and style of wheel."

It will be noticed that both these methods of driving the wheel dispense with the necessity of making any hole for a dog in the body of the wheel. There is more or less objection to this practice with all disk wheels, and devices which enable a tire to be turned without interfering with the structure of the wheel are in demand. A spoked wheel can of course be driven by an ordinary dog, which is certainly a

Here it will be seen that the two end panels of bottom chord *aa* (marked "latticed channel-bars") and the vertical



suspension rod *b* are converted into stiff members, and to them is added the collision strut *c*, all for the purpose of protecting and strengthening the end of the span against the destructive shocks to which it is specially exposed. In spans of less than 100 ft., the bottom chord is made a stiff member from end to end.

C. SHAHER SMITH.

Announcement from the Committee on Freight Train Brakes.

AURORA, Ill., Dec. 5, 1885.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The proposed brake test which was to have been held at Burlington, Ia., Dec. 7, will not take place, the required number of competitors having failed to respond.

A meeting of the committee will be held at Harrisburg Pa., Jan. 6, 1886, at the Lochiel Hotel. Action will be taken on the correspondence that has grown out of the committee's proposed trial. It is expected a modification can be agreed upon that will be satisfactory to both the owners of brakes and the committee.

G. W. RHODES,

Chairman Automatic Freight Brake Committee,
Master Car-Builders' Association.

The Operating Department and Management of a Railroad.

II.

A division's requirements as to officers vary so that it is almost impossible to describe in a general way what the Division Superintendent's staff should consist of. However, the important duties are of about the same nature in most cases, and may be named and ranked as follows: Assistant Engineer, Master Mechanic, Master Car-Builders, and Trainmaster. On a terminal division, where there are large yards and foreign connections, he should also have an assistant known as a General Yardmaster, who should have more ability and responsibility than the average yard master. There are other assistants who may be needed in case there are ferries, elevators, coal blocks, and such things as would not usually be under the direction of the Station Agents. There are, however, special officers for special purposes, and we need not enter into this consideration.

The Assistant Engineer is virtually the Roadmaster, or what was formerly known as such. With no more authority, but, it is to be hoped, with a little more learning; as the title would imply. He should have charge of all civil engineering, maintenance of way and real estate belonging to the division intrusted to the Superintendent's care.

The Master Mechanic should be in charge of all motive

power matters, and have exclusive control on the shop-side of the turn-tables. His authority should end there, so as to prevent conflicts and misunderstandings between his and the transportation department, excepting in cases of abuse and damage to locomotives and machinery, when he should be used as an expert by the Division Superintendent in determining the cause, damage and necessary discipline required.

The Master Car-Builder should have the charge and authority over the car department, including all outside car repairers and car inspectors.

The Trainmaster should have charge of transportation matters, including dispatchers, telegraph operators, signal and train-men and the movement of cars on the division.

The General Yardmaster, where there is sufficient yard work to justify the employment of such an officer, should have charge of all yard work and employés, excepting such clerks as it may be necessary for the agent to have stationed at different points in the yard.

(A list of the minor officers and employés below the rank of heads of departments will be given later.)

The remainder of the employés should not be connected with the above departments, but should be directly under the personal supervision of the Division Superintendent. The object of this arrangement is to give that officer, who has many duties and cares, as much of a check as possible on each officer and employé, making as near as can be, what would be known in the switch and signal world as an "interlocking system"—a very desirable end to attain; for man, being mortal, naturally needs every assistance that can be given to enable him to manage such a complicated mass of men and matters as a division of a railroad.

The smallest detail of management is so important that from this point it is proper to consider the questions of organization and management together.

The most conspicuous officers are, as they come into contact with the largest number of employés, the two classes of superintendents; and every act of theirs is open to more or less criticism by a large number of experts in their particular line—which railroad men really are, especially when they are what each officer should strive to have under him, good and desirable men. These two classes of officers should therefore be most careful about their every act, not only official, but in daily life also, setting the proper example to those under them, and at least demanding by their general behavior and natural dignity the respect and good feeling from the men that can be claimed and gotten only in that way. It cannot be forced from them or gotten by pomposity or riding in special cars, nor by any act not consistent with a true and manly man. Many of the officers who have two sets of rules, one for themselves and another for the employés under them, are foolish enough to imagine that they are successful in their endeavor to hoodwink their men; but they are not, and their policy is of little credit to themselves or advantage to their companies. Each act of every officer, both official and personal, is closely watched by many eyes and fully discussed from an intelligent stand-point, and does either good or harm, as the case may be. Little errors in judgment are much more quickly forgiven than unfairness, favoritism, meanness, bad habits or unnecessary harshness and dishonesty. The writer has dwelt upon this point longer than may seem necessary in the eyes of some, for the reason that he firmly believes that many misunderstandings between the officers and men originate from one of these causes. Railroad men as a class are raised in a different school from most men, and from the very beginning appear to have more reverence and respect for the rules and regulations of their respective companies and officers than they have for the laws of their country, and seldom ask more than they deserve. This is to be expected, as they are naturally a law-abiding and educated class, with a strong desire to remain at home on what they consider their own roads, keeping their positions and gaining such promotions as they can. The rules of the company they come in contact with daily, the laws of the country they only know to be in existence through hearsay. This is just so much more reason why those rules and regulations should be administered with great care, and the administrator should be as much above reproach as possible.

A General Superintendent should be a person fully instructed and competent to act as judge or expert in all matters pertaining to his department. He should be untiring in the supervision of the treatment of all employés by the officers under him, and should be capable of judging of the necessities of each division when properly laid before him, not doing as is quite common in times of depression of business—reducing expenses in a wild and erratic manner, governed more by the knowledge of what each division superintendent will stand personally, or rather what he is foolish enough to assume the moral and official responsibility for, than what is consistent with economy for the company's interest.

Standards for all classes of work should be worked up by the General Superintendent's staff, and furnish all divisions alike by him. Divisions should be given the same advantages even to the smallest details, or, if necessities require it, be subject to the same restrictions, excepting possibly where leading to large cities, where a different class of service may be required and better accommodations demanded. All this should be very carefully handled, however, as favoritism or unfair treatment is quite apt to discourage division officers as any other class of employés. Discouraged, disheartened or disgusted employés, of high or low degree, are never profitable to any corporation, and the best thing any company can do is to pension off, if they cannot discharge, an officer who causes such a feeling. He is an expensive luxury and one that no railroad, where so much depends upon the interest and good will of all, can afford.

So many written or telegraphic orders and instructions

RAILROAD EARNINGS IN OCTOBER.

NAME OF ROAD.	MILEAGE.						EARNINGS.						EARNINGS PER MILE.						
	1885.	1884.	Inc.	Dec.	P. c.		1885.	1884.	Inc.	Dec.	P. c.		1885.	1884.	Inc.	Dec.	P. c.		
EASTERN ROADS.																			
Baltimore & Potomac	92	92					125,145	114,377	10,768				9.4	1,360	1,243	117		9.4	
Boston, Hoosac Tun. & West.	87	87					46,424	45,186	3,238				7.2	557	519	38		7.2	
Buffalo, Rochester & Pitts.	294	294					116,470	114,394	1,976				1.7	346	389	38		1.7	
Danbury & Norwalk	37	37					92,623	91,973	650				3.0	611	504	17		3.0	
Grand Trunk	2,977	2,977					1,388,817	1,477,137		158,320	10,7	44,406		406	34			53	10.7
Long Island	354	354					225,895	235,886	12,009				5.6	643	607	34		5.6	
N. Y. City & Northern	54	54					44,397	34,020	10,377				30.5	822	630	192		30.5	
N. Y., L. Erie & West.	1,073	1,073					1,023,731	1,512,158	112,579				7.5	1,510	1,400	104		7.5	
N. Y. & New England	400	400					319,966	306,734	33,232				10.8	850	767	83		10.8	
N. Y., Ontario & Western	373	373					106,790	185,043					6.1	715	674	41		6.1	
N. Y., Sus. & Western	147	147					105,086	99,058	6,028				2.7	1,658	1,614	44		2.7	
Pennsylvania	322	322					534,010	519,794	14,210				0.2	375	374	1		0.2	
Philadelphia & Reading	2,310	2,180	130			5.0	4,359,171	4,47,544					1.9	1,887	2,040		153	7.7	
West Jersey	1,560	1,560					2,878,370	2,940,541					0.2	1,845	1,885			40	2.1
Total, 15 roads	10,282	10,141	141				12,006,611	12,123,805	207,917	325,111				1,188	1,195				27
Total inc. or dec.			141			1.4				117,134	0.9								27
SOUTHERN ROADS.																			
Alabama Great Southern	200	200					104,273	100,734		5,461	4.0	360	378					18	4.0
Chesapeake & Ohio	520	520					307,436	270,180	37,256				13.8	591	520	71		13.8	
Eliz. I. ex. & Big Sandy	130	130					70,932	68,574	2,358				3.3	546	527	19		3.3	
Ches., Ohio & Southwestern	309	309					163,107	136,945	26,162				19.1	409	343	66		19.1	
Cin., N. O. & Tex. Pacific	336	336					257,163	242,380	14,783				6.1	765	721	44		6.1	
East Tenn., Va. & Ga.	1,100	1,100					412,280	411,380	900				0.2	375	374	1		0.2	
Kentucky Central	250	250					81,217	80,597	620				0.8	150	161			11.6	
Louisville & Nash.	2,015	2,065	50	2.4			1,262,340	1,291,714		29,374	2.3	626	625	1				6.0	
Memphis & Charleston	292	292					133,795	126,245	7,550				6.0	458	432	26		6.0	
Mobile & Ohio	527	527					235,878	212,450	13,419				6.3	429	403	26		6.3	
Nashville, Chatta. & St. L.	580	574	6	1.0			191,846	203,737		11,891	5.8	331	355					24	6.7
N. Orleans & Northeastern	195	195					77,415	80,041					2.6	268	3.3	397	410	13	3.3
Norfolk & Western	512	503	9	1.8			285,955	288,495		2,330	0.0	559	574					15	2.6
Rich. & Danville	757	757					419,800	428,100		8,300	1.9	555	506					11	1.9
Virginia Midland	352	352					150,022	167,595		17,573	10.4	426	476					50	10.4
Western N. Carolina	274	274					45,841	41,350	4,491				10.8	167	151	16		10.8	
South Carolina	247	247					134,961	157,352		22,391	14.3	546	627					91	14.3
Vicksburg & Meridian	142	142					47,997	55,333		7,336	13.3	338	390					52	13.3
Total, 20 roads	10,168	10,164	55	50			4,905,963	4,927,688	107,548	129,273				482	485				3
Total inc. or dec.			5							21,725	0.4								3
CENTRAL GROUP.																			
Chi. & Eastern Illinois	252	252					174,215	156,577	17,638				11.2	601	621	70		11.2	
Chi. & West Michigan	413	413					124,640	128,035		3,395	2.6	206	308					12	4.0
Cin., Ind., St. L. & Chicago	342	342					220,200	241,144		20,878	8.7	644	705					61	8.7
Cin., Wash. & Baltimore	281	281					152,041	168,004		16,563	9.9	541	600					59	9.9
Clev., Akron & Columbus	144	144					45,290	44,892	308				0.7	314	312	2		0.7	
Clev. & Canton	161	161					27,118	29,861		2,742	9.2	168	185					17	9.2
Detroit, Lansing & No.	261	261					128,746	133,100		4,354	3.3	493	510					17	3.3
Evansville & Terre Haute	146	146					70,920	63,759	7,161				11.2	486	457	49		11.2	
Flint & Perv Marquette	362	362					178,735	188,007		9,272	5.0	404	520					26	5.0
Illinois Central, Ill. Lines	953	953					63												

RAILROAD EARNINGS, TEN MONTHS TO OCTOBER 31.

NAME OF ROAD.	MILEAGE.					EARNINGS.					EARNINGS PER MILE.				
	1885.	1884.	Inc.	Dec.	P. c.	1885.	1884.	Inc.	Dec.	P. c.	1885.	1884.	Inc.	Dec.	P. c.
EASTERN ROADS.															
Balt. & Potomac	92	92	.....	.....	.....	1,060,414	1,017,584	\$1,830	.....	8.0	11,950	11,061	\$86	.....	8.0
Bos., Hoos. T. & W.	87	87	.....	.....	.....	387,511	370,503	8,008	.....	2.1	4,454	4,362	92	.....	2.1
Buff., Rock. & Pitts.	294	294	.....	.....	.....	1,002,623	945,296	57,627	.....	6.1	3,411	3,215	196	.....	6.1
Dan. & Norwalk	37	37	.....	.....	.....	190,874	180,556	10,318	.....	5.7	5,159	4,880	270	.....	5.7
Grand Trunk	2,954	2,954	.....	.....	.....	12,642,736	14,336,211	1,693,475	11.8	4,280	4,853	573	11.8	.....	.....
Long Island	354	354	.....	.....	.....	2,476,219	2,418,276	57,943	.....	2.4	6,995	6,831	164	.....	2.4
N. Y., L. E. & West.	1,075	1,075	.....	.....	.....	12,968,796	13,907,570	938,774	6.7	12,064	12,937	873	6.7	.....	.....
N. Y. & New Eng.	400	400	.....	.....	.....	2,495,275	2,452,448	42,827	.....	1.7	6,238	6,131	107	.....	1.7
N. Y., Ontario & W.	373	373	.....	.....	.....	1,570,405	1,651,995	81,590	4.9	4,210	4,429	219	4.9	.....	.....
N. Y., Susq. & W.	147	147	.....	.....	.....	908,605	849,249	50,356	.....	6.9	6,171	5,777	394	.....	6.9
Northern Central	322	322	.....	.....	.....	4,499,629	4,604,803	105,174	2.3	13,974	14,301	327	2.3	.....	.....
Pennsylvania	2,279	2,136	149	.....	7.0	37,596,803	40,846,647	3,240,841	8.0	16,497	19,177	2,680	14.0	.....	.....
Phila. & Reading	1,500	1,500	.....	.....	.....	23,971,564	26,102,464	2,130,900	8.2	15,306	16,732	1,366	8.2	.....	.....
West Jersey	200	189	11	.....	5.9	1,113,765	1,153,676	.....	3.5	5,569	6,104	535	8.8	.....	.....
Total, 14 roads.	10,174	10,114	160	.....	1.6	102,924,523	110,816,278	317,909	8,239,665	.....	10,116	10,960	844	.....	844
Total inc. or dec.	.....	.....	160	.....	1.6	.....	7,921,756	7.1	.....	.....	844	.....	844	.....	844

NAME OF ROAD.	SOUTHERN ROADS.					EARNINGS.					EARNINGS PER MILE.				
	1885.	1884.	Inc.	Dec.	P. c.	1885.	1884.	Inc.	Dec.	P. c.	1885.	1884.	Inc.	Dec.	P. c.
Ala. St. Southern	200	200	.....	.....	.....	861,840	892,335	.....	30,186	3.4	2,973	3,077	104	3.4	.....
Ches. & Ohio	520	520	.....	.....	.....	2,762,360	2,953,614	.....	191,254	6.5	5,312	5,080	368	6.5	.....
Eliz., Lex. & B. S.	130	130	.....	.....	.....	580,441	625,815	.....	45,374	7.2	4,465	4,814	349	7.2	.....
Ches., O. & S'west.	309	309	.....	.....	.....	1,272,023	1,097,374	174,049	.....	15.9	3,188	2,750	438	15.9	.....
Cin., N. O. & Tex. P.	333	336	.....	.....	.....	2,167,160	2,188,019	20,854	0.9	6,450	6,512	62	0.9	.....
E. Tenn., Va. & Ga.	1,100	1,100	.....	.....	.....	3,300,812	3,236,630	73,173	.....	2.3	3,009	2,942	67	2.3	.....
Fia., Ry. & Nav. Co.	533	490	43	.....	8.8	772,594	789,036	.....	16,442	2.1	4,750	4,610	160	9.9	.....
Ill. Cent. So. Div.	711	591	120	.....	20.3	3,364,031	3,206,668	158,263	.....	4.9	4,733	5,426	693	12.8	.....
Kentucky Cent.	250	227	23	10.1	.....	710,392	773,412	63,020	8.2	2,842	3,407	565	10.8	.....
Louisville & Nash.	2,031	2,065	.....	34	1.6	11,378,994	11,170,742	208,252	.....	1.9	5,603	5,410	183	3.6	.....
Mem. & Charleston	292	292	.....	.....	.....	1,029,954	1,111,864	81,910	7.4	3,528	3,808	280	7.4	.....
Mobile & Ohio	527	527	.....	.....	.....	1,537,670	1,622,443	84,773	5.2	2,917	3,080	163	5.2	.....
Nash., Chat. & St. L.	576	560	16	.....	2.8	1,759,712	1,965,169	9,5,457	10.5	3,055	3,509	454	13.0	.....
N. O. & Nor'east.	195	195	.....	.....	.....	538,921	535,393	185,528	52.6	2,768	1,812	952	52.5	.....
Norfolk & Western	512	503	9	1.8	.....	2,251,020	2,219,240	31,800	1.4	4,397	4,412	15	0.3	.....
Rich. & Danville	757	757	.....	.....	.....	3,243,644	3,134,060	108,984	3.5	4,285	4,141	144	3.5	.....
Va. Midland	352	352	.....	.....	.....	1,284,807	1,351,760	66,962	4.9	3,650	3,840	190	4.9	.....
Western N. C.	274	227	47	.....	20.7	383,385	359,678	23,707	6.6	1,399	1,584	185	11.6	.....
South Carolina	247	247	.....	.....	.....	916,212	968,265	52,053	5.4	3,709	3,920	211	5.4	.....
Vicks. & Meridian	142	142	.....	.....	.....	347,226	390,356	43,130	11.0	2,445	2,755	310	11.0	.....
Total, 20 roads.	10,174	9,950	258	34	2.2	40,473,127	40,410,491	964,356	901,720	.....	3,978	4,061	83	83	.....
Total inc. or dec.	.....	.....	234	.....	2.2	.....	62,636	0.1	.....	.....	83	83	2.1	.....	.....

NAME OF ROAD.	CENTRAL GROUP.					EARNINGS.					EARNINGS PER MILE.				
	1885.	1884.	Inc.	Dec.	P. c.	1885.	1884.	Inc.	Dec.	P. c.	1885.	1884.	Inc.	Dec.	P. c.
Chi. & Eastern Ill.	252	252	.....	.....	.....	1,341,320	1,277,730	63,509	5.0	5,323	5,070	253	5.0	.....	.....
Chi. & West Mich.	413	413	.....	.....	.....	1,070,676	1,269,506	198,724	15.7	2,503	3,074	481	15.7	.....	.....
Cin., Ind.-St. L. & Chi	342	342	.....	.....	.....	1,373,083	2,035,373	62,290	3.1	5,769	5,951	182	3.1	.....	.....
Cin., Wash. & Balt.	281	281	.....	.....	.....	1,401,256	1,528,805	127,549	8.3	4,987	5,441	454	8.3	.....	.....
Cleve., Akron & Col.	144	144	.....	.....	.....	409,015	407,668	1,347	0.3	2,840	2,833	9	0.3	.....	.....
Det., Lan. & No.	261	261	.....	.....	.....	1,014,679	1,147,634	132,955	11.6	3,888	4,397	509	11.6	.....	.....
Ev. & Terre Haute	146	146	.....	.....	.....	624,507	628,134	3,627	0.6	4,277	4,302	25	0.6	.....	.....
Flint & Pere Marq.	362	362	.....	.....	.....	1,584,204	1,922,828	338,534	17.7	4,377	5,312	953	17.7	.....	.....
Ill. Can., Ill. lines	963	953	.....	.....	.....	5,330,586	5,113,197	217,389	4.2	5,593	5,365	228	4.2	.....	.....
Ind., Bloom. & W.	582	582	.....	.....	.....	1,971,022	1,049,034	21,988	1.1	3,705	3,684				



Published Every Friday.

EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to all departments of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns our own opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

THE LATE WM. H. VANDERBILT.

Mr. Wm. H. Vanderbilt, whose sudden death last Tuesday afternoon startled the community, did not create his commanding position in the railroad world, but was, in a manner, forced into it. He began his railroad career comparatively late in life, to take part in the management of the enormous property accumulated by his father, a man of tremendous force and energy, who carried out plans on a scale which scarcely anyone else ventured to undertake at that time, though they have been common enough since. The old Commodore did not know much about railroads when he began to acquire them; but he knew a great deal about transportation, having been engaged in it from his earliest youth constantly, and for years on a grand scale. The son was called from a Staten Island farm to become a railroad manager. It was simply indispensable that he should be a railroad manager if the property were to remain in the family. He might have held no office and given no order directly to those who did; but as the owner of a controlling interest in some of the greatest railroads in the country, he still would have been compelled to select the officers of those companies; and this largely is what railroad management consists of—the choice of persons to form the policy of a company and carry it out, or at least to carry out the policy formed.

At this stage of railroad history the conduct of a great system of railroads in this country needs the qualities of a statesman and a general. The management needs breadth of mind, to see clear, to see far, to plan wisely, to carry out plans skillfully and firmly, yet with a certain elasticity which will modify them as circumstances change or as the plans themselves are seen to be defective. It needs a tremendous force of will and courage; but it will fight many costly and disastrous battles unless it also commands the arts of diplomacy, and knows how to yield what it cannot gain without too great cost, if at all. One great army of men it must know how to command; another, it must know how to persuade. More and more, as time goes on, it becomes evident that the successful railroad management must act on the conviction that it is performing a public service, and hold itself responsible in no small measure to the community as well as to the shareholders in the enterprise which it conducts.

It is not necessary to say that neither Mr. Wm. H. Vanderbilt nor his father before him filled out the measure of these requirements. Probably no one man has ever done so, and in fact the combination of qualities for an ideal railroad management is to be looked for in an organization of men rather than in a man, where force may be supplied by one, diplomacy by a second, strategy by a third, and so on; which will still make it necessary for the head to be able to judge when to use the qualities which are at his command. But when we consider the enormous responsibilities which the death of Cornelius Vanderbilt threw upon his son, the inevitable struggles to preserve the value of his various railroads, the great number of new competitors entering the field from year to year, the competition of other old systems, often managed with

very great skill, the rapid changes in railroad methods and policies, we must confess that very few men put in his place would have acquitted themselves as well. The great system which came into his hands has been preserved, improved and greatly enlarged; two periods of very serious industrial depression have been safely passed; and very important measures have been taken for the protection of the system against dangers which threatened to ruin it. He also provided for the future stability of the system by changes in the organization promising greater continuity, or at least less dependence on the life of an individual, than in his father's day, a matter of very great importance too often neglected in business enterprises; so that now at his death his companies have no change to make except the filling of a vacancy in the several boards of directors. The New York Central has had two presidents since Mr. Vanderbilt resigned, and all his companies will go on, except for his counsel as a director and the chief shareholder (which of course may often have decided their policy) just as before.

Mr. Vanderbilt's temperament was not of the kind which is likely to harmonize readily with business rivals. In fact, the qualities which were indispensable in the formation of the great railroad systems, and especially the tremendous force of will which characterized John W. Garrett and Cornelius Vanderbilt particularly, often are obstacles to the co-operation which has become indispensable to the success of many great companies. The late Mr. Vanderbilt inherited something of this willfulness from his father; he wanted his own way. Nevertheless, he learned, as probably his father would never have learned, the necessity of co-operation, and among the trunk lines his has been perhaps as tractable as any save one since they began to co-operate in 1877. The two great trunk line wars of this period, that of 1881 and the one just closed, were, it is true, instituted by his company, but the last one certainly and the other probably were what may be called strategic wars, not intended or expected to have much effect on the course of traffic at the time, but to ward off threatened permanent dangers. For this purpose the first one failed, but the last one was a complete success, and has perhaps insured not only the Vanderbilt roads but many others against a danger which only a few years ago seemed to threaten nearly every profitable line.

The effect of Mr. Vanderbilt's death on the stock market is not, as some might think, an indication that the public think that his railroads will be less well managed after his death than before, but is due to the fact that Mr. Vanderbilt was credited with sustaining the market when there seemed to be danger of demoralization. In the speculative markets a great many men are always ready to depress prices artificially whenever they think they can make anything by it. Now, the knowledge that a man commanding scores of millions of capital was able and often disposed to oppose actively such "bear raids," has doubtless made these people much more cautious than they would have been otherwise. The existence of Mr. Vanderbilt, able any day to put \$50,000,000 in the market, and disposed to do so if prices were threatened, has been to a certain extent a policy of insurance against rapid artificial reductions in prices. That policy necessarily expired with him. For the present it is impossible to employ his capital to sustain the market, and it is uncertain whether it ever can be so employed again. If, as has been intimated, the larger part of his fortune is left in the hands of trustees to manage for the benefit of the heirs, it is not probable that part of it will ever be used for stock speculations; if the whole is divided among the heirs, such co-operation among them would be required that the capital is not likely to be used to the same extent or with such effect for that purpose as when it was all at the command of one determined man.

NOVEMBER EARNINGS.

Only a very few months ago the larger number of railroads reporting were showing a decrease in earnings from month to month compared with last year. How great the change since then may be seen by the fact that of 28 railroads reporting for November so far, only four have any decrease in earnings, while they have a great gain in the aggregate, as follows:

1885.	1884.	Increase.	P c.
\$15,173,350	\$13,933,207	\$1,240,143	8.9

Earnings. \$15,173,350 \$13,933,207 \$1,240,143 8.9
We must not, however, exaggerate the present favorable condition. It is not so much because they are doing extraordinarily well this year as that they were doing extraordinarily ill last year that there has been so great a gain. Last year the decrease in November of 79 railroads reporting compared with 1883 was 8.9 per cent., and not to have made a gain this year would have been doing marvelously ill. The change is really important

and very encouraging, nevertheless, because it shows that the downward tendency has been arrested very decidedly.

We shall see better what roads have made gains and whether the gain is simply a recovery of last year's losses, by an examination of the November earnings of each one separately for several years past, which we have done below for the more important roads that have reported so far.

The Northern Pacific shows a gain of 11 per cent. over last year, in its November earnings, but compared with 1883 a decrease of 2 per cent. For five years its earnings in November have been:

1881.	1882.	1883.	1884.	1885.
\$475,611	\$751,633	\$1,276,022	\$1,116,397	\$1,251,062

The earnings were \$270,819 less in November than in October, while last year the difference was \$345,132, and in 1883 \$121,200. After November the earnings of this road always decrease greatly. Last year they were less for the four months from December to March, inclusive, than in the two months, October and November; and this year in the three fall months they have been \$3,997,898, which is \$400,000 more than for the first five months of the year. The increase in November is much greater than in any other month. Indeed, there have been but two other months of this year in which there was any increase—\$49,879 in February and \$60,370 in October, against \$184,682 in November.

The St. Paul & Duluth's November earnings have been:

1881.	1882.	1883.	1884.	1885.
\$78,282	\$128,959	\$141,730	\$149,320	\$150,722

Scarcely any railroad in this country has shown such a steady growth in earnings of late years as this one, which is the more noticeable because it is no longer the sole route from St. Paul and Minneapolis to Lake Superior. Its increase over last year in November has been 7 per cent., and for the ten months ending with November, 4 per cent.

The Canadian Pacific reports for November:

1882.	1883.	1884.	1885.
\$287,852	\$501,651	\$647,000	\$808,000

The great extension of this road deprives the increase in earnings of much significance. These were 25 per cent. in November and 44 per cent. for the 11 months ending with November more than last year. The decrease from October was \$74,000 this year and \$88,500 last year.

Passing now to the railroads west and northwest of Chicago, we find the Chicago, Milwaukee & St. Paul to have earned in November:

1881.	1882.	1883.	1884.	1885.
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\$1,569,598	\$2,072,973	\$2,387,662	\$2,308,877	\$2,638,000
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The increase over last year is 14 per cent., over 1883 10%, and over 1882 22% per cent. The increase in mileage has been 26 per cent. since 1881, 20 per cent. since 1882, and 22 per cent. since last year. The increase in earnings was overdue, for not only was it to be expected from the increase in mileage, but still more from the development of the new country on its immense mileage of new road. It is all the more satisfactory, however, because it comes when immigration has been light for some time, and so is due, not to the supplying of the needs of a new population, who have everything to buy, and buy with capital brought into the country, but to the production of a population which has been on the ground for some time. The same reflection applies to other railroads in the same general territory, and quite as much, probably, to the Northern Pacific and the Manitoba as to any, as well as to the Northwestern and other roads considered below.

The Chicago & Northwestern earned in November:

1881.	1882.	1883.	1884.	1885.
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\$2,019,037	\$2,109,432	\$2,398,542	\$1,996,500	\$2,282,200
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The increase over last year is 13 per cent., but, compared with 1883, there is a decrease of 4 per cent., and the gain over 1882, when there was a tenth less road, is only 7 per cent. Here, more emphatically than with the Milwaukee & St. Paul, the increase was overdue, though the Northwestern has not so great an increase of mileage. It is noticeable that the Northwestern's earnings fell off from October to November much more than the St. Paul's—\$53,400, against \$254,000. In the four months since June the Northwestern has had an increase of \$527,981; the St. Paul an increase of \$638,548; all of the Northwestern's gain was made in the last two months, and nearly all the St. Paul's.

The St. Paul & Omaha reports for November:

1881.	1882.	1883.	1884.	1885.
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\$392,921	\$515,008	\$540,185	\$540,930	\$606,000
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The increase over last year is 12 per cent., over 1883 only 3 per cent., while the mileage has increased 7 per cent. in the two years. A very large part of this company's lines is new, but much of the new road is in wooded country, which does not grow fast. Per mile of road its earnings were \$455 last November, against \$534 on the Milwaukee & St. Paul and \$588 on the Northwestern.

The Milwaukee, Lake Shore & Western has been growing fast in length, which partly accounts for its great gain in earnings, which have been in November:

1881.	1882.	1883.	1884.	1885.
\$64,654	\$80,905	\$103,943	\$95,215	\$130,635

There is a gain of 37 per cent. this year over last, and of 26 per cent. over 1883. The road depends very largely on the lumber trade. The Milwaukee & Northern, parallel with the last named for the southern part of its line, and also growing, has reported for but three years, earning \$44,168 in November, 1883, \$42,904 in 1884, and \$51,721 this year—a gain of 20½ per cent. over last year.

The Burlington, Cedar Rapids & Northern is another growing road, working two-fifths more miles than last year. It has earned in November:

1881.	1882.	1883.	1884.	1885.
\$202,180	\$278,420	\$308,200	\$274,131	\$313,006

The increase over last year is 14 per cent., over 1883 1½ per cent., which is insignificant in comparison with the gain in mileage. Its earnings per mile are now extremely light—only \$316 last month. Moreover, the gain in November is much less than in October (\$38,875, against \$68,059).

The Central Iowa, similarly situated, but a little further south, has earned in November:

1881.	1882.	1883.	1884.	1885.
\$85,880	\$106,353	\$143,244	\$120,302	\$123,717

The gain over last year is trifling, and the decrease compared with 1883 is large, but it had a considerable decrease compared with last year in October and September as well as in previous months.

The Iowa lines of the Illinois Central have earned in November:

1881.	1882.	1883.	1884.	1885.
\$164,678	\$176,333	\$201,930	\$148,096	\$155,100

This shows an increase of 4½ per cent. compared with last year, but smaller earnings than in previous years and 23 per cent. less than in 1883, so that the causes which swelled the earnings of neighboring roads, like the Northwestern and St. Paul, have had but little effect on this. But there is a favorable change from months previous to November, for these roads had a large decrease (9 per cent.) in October, and a considerable one in September and previous months of this year.

Going a little farther south the Illinois lines and the Southern Division of the Illinois Central together have earned:

1881.	1882.	1883.	1884.	1885.
\$1,037,396	\$1,101,929	\$1,119,610	\$1,053,123	\$1,074,000

Thus the earnings were less this year than in any other since 1881, except last year, and only a very little more than last year. The Southern Division for several months has had a decrease in earnings, but the Illinois lines recently an increase, which in October slightly exceeded the losses on the Southern lines.

Southwest of Chicago we find the Chicago & Alton's November earnings:

1881.	1882.	1883.	1884.	1885.
\$672,380	\$749,915	\$801,187	\$753,857	\$732,981

The decrease from 1884 is 2½ per cent.; from 1883, 8½ per cent.; but the decrease of \$20,876 in November is much better than the decrease of \$141,897 in October, \$182,673 in September, \$135,506 in August, or even the average monthly decrease of \$43,314 for the seven months ending with July. We should not lose sight of the fact, however, that this is largely because the earnings fell off greatly and suddenly last year in November; while before November they had been but little less than in 1883 in the last half of the year and somewhat greater in the first half. Thus for the last five months its earnings have been for five years:

1881.	1882.	1883.	1884.	1885.
July... \$676,205	\$702,635	\$731,503	\$730,944	\$660,584
Aug.... 769,751	850,398	886,556	855,904	724,398
Sept.... 774,700	912,602	934,945	916,964	754,291
Oct.... 771,844	858,674	901,619	889,017	747,140
Nov.... 672,380	749,915	801,187	753,857	732,981

What seems to have happened to this road is the loss of its usual after-harvest traffic. That is, the earnings in August and every fall month have usually been much greater than in July, but this year not nearly so much as usual. Thus the average of the four months from August to November was \$739,702 this year, or \$79,118 more than the earnings in July, while last year the average for the four months was \$854,940, and \$123,996 more than in July; in 1883, \$881,077, and \$149,574 more than in July; and in 1882, \$844,420, and \$141,785 more than in July, and in 1881 \$747,169, and \$70,964 more than in July, which latter is much like the result this year. There is one obvious cause of this, the failure of the winter wheat crop, but it is hardly possible that this can account for more than a small part of the decrease. It is noticeable that the road had an increase in the last week of November. In the first half of this year it had a decrease of \$235,386; in the last five months the decrease has been \$514,626. The result in November gives reason to hope that the decline is at an end.

Still further south, and southwest of St. Louis

instead of Chicago, the St. Louis & San Francisco reports for November:

1881.	1882.	1883.	1884.	1885.
\$276,556	\$333,026	\$365,462	\$399,874	\$408,300

There has been an uninterrupted gain from year to year, and the increase over last year is 17 per cent., with but little increase in mileage, so that the earnings per mile increased from \$515 to \$575. What should have increased them so much does not appear, but the road gets a considerable traffic in cattle and hogs, which have been going to market in large numbers, and a little later, but sooner than almost any other road, it should carry a great deal of corn. In October it had a small decrease, and in most previous months of this year a large one, the average monthly decrease for the ten months before November being \$33,190, so that the change is remarkable.

The Chicago & Eastern Illinois reports:

1881.	1882.	1883.	1884.	1885.
\$139,473	\$161,704	\$149,908	\$135,401	\$159,271

The gain over last year is 18 per cent. and the earnings have been exceeded but once in November, and then but slightly. There was a small loss in October, but a gain of 7½ per cent. in September, and of 4 per cent. for the nine months ending with September.

The Cincinnati, Indianapolis, St. Louis & Chicago, southeast of Chicago, and to some extent a carrier of trunk-line traffic, earned:

1881.	1882.	1883.	1884.	1885.
\$41,014	\$223,302	\$211,264	\$196,313	\$194,365

Thus this road had smaller earnings this year than in any other since 1879, though but little less than last year. But in October its decrease was \$21,829 and in September \$28,793, while it was but \$1,948 in November—very decided improvement.

The Indiana, Bloomington & Western reports:

1881.	1882.	1883.	1884.	1885.
\$200,451	\$204,735	\$235,972	\$185,045	\$207,396

In 1882 and 1883 the 152 miles of the Indianapolis, Decatur & Springfield were included, and allowing for these, the earnings may have been larger this year than ever before, as they were 11 per cent. more than last year. This, too, carries some trunk line traffic.

Northeast of Chicago, the Chicago & West Michigan earned:

1881.	1882.	1883.	1884.	1885.
\$118,421	\$135,938	\$121,914	\$107,772	\$122,881

This increase this year in November of \$15,109 (14 per cent.) contrasts with the decrease of \$3,395 in October, of \$11,967 in September, and the average monthly decrease of \$23,460 in previous months of this year.

The Detroit, Lansing & Northern earned:

1881.	1882.	1883.	1884.	1885.
\$121,983	\$140,364	\$132,315	\$87,817	\$104,271

In this case there is a gain over last year truly, but the earnings remain smaller than in any other November since 1879, and 25 per cent. less than in 1882, when they were largest. The road had a small gain (\$2,185) in October and also in September (\$2,102); but an average monthly decrease of \$17,012 previous to September.

The Ohio Southern's November earnings have been:

1882.	1883.	1884.	1885.
\$36,625	\$32,655	\$48,333	\$48,374

The earnings were very little more than last year, while in October they were one-eighth larger, and in September 27½ per cent. more. In previous months they were less.

In the East the Grand Trunk reports:

1882.	1883.	1884.	1885.
\$1,492,128	\$1,638,073	\$1,340,164	\$1,235,872

Thus the earnings this year were less than in any other year reported—7½ per cent. less than last year and 25 per cent. less than in 1883. But here again the loss is less than it has been—\$104,292, against \$158,320 in October, \$182,331 in September, and an average of \$166,370 in previous months.

The Long Island Railroad has earned:

1882.	1883.	1884.	1885.
\$170,404	\$182,569	\$182,348	\$188,268

The earnings this year were larger than ever before. The gain is slightly less than in October, but a great deal more than in September or the average of other months.

The Buffalo, Rochester & Pittsburgh has earned:

1882.	1883.	1884.	1885.
\$31,338	\$82,885	\$104,501	\$113,322

Only two-fifths of the road was open in 1882, but the mileage has not changed since that year. The gain was \$1,976 in October, \$6,806 and in September.

In the South the Louisville & Nashville reports:

1881.	1882.	1883.	1884.	1885.
\$1,065,293	\$1,200,902	\$1,307,304	\$1,199,595	\$1,111,255

Thus its November earnings this year were the smallest since 1881, and were 7½ per cent. less than last year. As the cotton crop is much larger this year than last, this is a disappointing result, but it is only a continuation of what has occurred before, for there was a decrease of \$46,803 in October as well as this of \$88,340 in November, while for the ten months ending with September, which followed a bad cotton

crop, there was an increase in the earnings of the road.

The Gulf, Colorado & Santa Fe earned:

1882.	1883.	1884.	1885.
\$24,507	\$230,925	\$160,656	\$240,409

expense of keeping 50 cars moving about for six months at their own expense for the sake of it?

It would seem more hopeful of good results, therefore, if the committee should finally conclude to have only one series of tests, with the whole apparatus in good order, and make that a thorough one. And the short and simple rule for preparing a perfectly fair and adequate schedule of such tests would seem to be—that any and every test of a reasonable and practical nature which any competitor should suggest as bringing out the strong points of his own brake or the weak points of another, should be made.

The requirement that no engine brake at all shall be used other than a hand brake on the tender we understand the committee have concluded to waive, if it is requested, to the extent of permitting the same engine and engine brake to be used at the head of all the competing trains, making tests both with and without it. The purpose of the stipulation was merely to restrict the test to the efficiency of car brakes only, which was reasonable and proper, but as the efficiency of buffer brakes on the cars depends on and varies with the efficiency of the brakes at the head of the train, a refusal to use driver brakes in any of the tests simply made it impossible for buffer brakes to compete on equal terms, by showing the best that they can do; and it is late in the day to condemn engine brakes, even by implication, as so inexpedient and unmecanical a device that a car brake which depends on them should therefore be ruled out. It is proper, however, that all brakes should be tested both with and without driver brakes, since they may often be absent in practice.

There are other tests not specifically provided for in the original circular, which no doubt will be requested and which no doubt the committee will grant if requested. One of these is the frequency with which stops can be made with full effect, or the necessary interval of time between them if they are to be made with full effect. Another is, that the rear half or third of the train shall be without any train brakes, a condition which will be the normal condition for average freight trains for many years after the introduction of freight brakes. This would probably tend to increase the comparative efficiency of buffer brakes, since those brakes are most effective on the head of the train. It would be reasonable, also, that this test should be repeated, setting hand brakes on the caboose only, since, in case of emergency, that would be an almost instinctive action, even in the face of instructions to the contrary, and it is, moreover, always easy to set them.

Another very important test would be comparative efficiency in holding the train while descending a long, heavy grade at various speeds, and still another would be comparative efficiency with cars loaded and empty. This latter would make less difference with the working of buffer brakes than might be imagined, since their action results from the holding back of the engine rather than the crowding forward of the cars. Still, it would make a difference, and one important to determine. Especially if this test were made it would be also important to determine whether, if the brakes were applied with full force to the empty cars, they were powerful enough to slip the wheels.

Still further tests would, no doubt, be suggested, and in the making of them all with adequate thoroughness in a single series of tests, it would probably be found that as much time, trouble and expense were involved as either the committee or the competitors would wish to give, while the results of such a series would be so generally acceptable, and do so much to settle the doubtful points involved, that an inconclusive durability test of a few cars for a few months would not be missed. Only, the tests should be thorough in fact, not only in the manner of making them, but in the manner of recording and analyzing the results.

The United States Supreme Court has just decided a case affecting the applicability of a contract made by the Missouri Pacific Company with Pullman's Palace Car Company, to haul the latter's sleeping cars, to the lines of the Iron Mountain Railroad, control of which was acquired by the Missouri Pacific by the purchase of its stock after the contract with the Pullman Company was made. The Court decides that the contract does not apply to the lines so controlled. But the language of the decision indicates that if it had bought the railroad instead of the stock, or leased and worked it directly, the contract would hold. Actually the Missouri Pacific board of directors exercises no power over the Iron Mountain as a Missouri Pacific board (even if it consists of the same persons), except to choose the Iron Mountain directors in the first place. The latter may legally take any action they please, without reference to the wishes of the Missouri Pacific. They

have actually contracted to haul New York Central Sleeping Car Company cars in place of the Pullman cars, and this the Court says they have authority to do, notwithstanding the exclusive contract of the Missouri Pacific in favor of the Pullman cars.

There are not a few cases of similar relations between two railroad companies. The New York Central controls the new West Shore Railroad in this way, and the Chicago, Burlington & Quincy the Burlington & Missouri River in Nebraska. This relation must be borne in mind by the railroad companies in buying patent rights, etc., as well as by others in making contracts with the companies. Probably a contest would never have arisen by but that the terms of the contract called for the use of Pullman cars on all lines owned or controlled by the Missouri Pacific, and the point of the decision is the interpretation of the word "control." It would appear that a company cannot contract as to the policy to be followed by a management which it controls only by voting its stock.

There has been some interesting writing on the use of injunctions as weapons in raids on railroad properties; but there has scarcely been a more aggravated case than that in which the holders of 329 shares out of the 894,283 of the New York Central & Hudson River Railroad Company stopped the execution of a contract which had already very largely increased the value of the property, and had been formally approved by nearly all the other stockholders and by the other parties to the contract; and which was generally recognized as for the best interests of the community. What makes the case worse is that the legal proceedings, doubtless, were taken solely for the purpose of affecting the stock market. They had a considerable, though temporary, effect, and were it not that the persons controlling the company have great resources and skill in affecting the market, the effect might have been the depreciation of stocks to the amount of many millions, and the making of a large fortune by the holders of \$32,900 of stock, through their complaints of what had increased the value of their holdings one-fourth. And for the damage they might do to the company (which might have been millions of dollars) they were required to give bonds to the amount of \$250! They probably failed to make what they expected in the stock market, and may have lost instead, but they caused the great New York Central Company to execute its lease of the West Shore Railroad, a measure of the greatest advantage to its stockholders, as if it were a crime which the police would prevent if any one knew they were doing it. For there are plenty of other people ready to make money in the stock market by any trick which may affect it, and if the decision of the court had been in favor of the company, some new suit might have been brought; so the New York Central, having privately made a settlement with the first litigants, had all things prepared and executed the lease of the West Shore just as soon as the suit was dismissed and before any one else had time to bring another. This is as if a man should have to sneak into his neighbor's house to make him a present. It was certainly very skilfully managed, like everything pertaining to the acquisition of the West Shore by the New York Central, but it is not creditable to our civilization that such skill should be necessary.

The United States Supreme Court has decided, in a case between a Dakota county and the Northern Pacific, that taxes cannot be collected on lands granted to railroad unless they have actually been conveyed to the company by the government, even when the non-conveyance is due to the company's neglect to pay the cost of surveying the land, which an act of Congress requires preliminary to conveyance, and the company has neglected to pay the cost of survey in order to prevent taxation. The Court says: "The remedy lies with Congress and is of easy application. If that body will take steps to enforce its lien for these costs of survey by sale of the lands, or by forfeiture of title, the Treasury of the United States would soon be reimbursed for its expenses in making these surveys, and the states and territories in which these lands lay be remitted to their appropriate rights of taxation."

This suggests that most of the complaints of the conduct of railroads with regard to land grants are due either to original vices of legislation, by which inalienable rights have been given which cannot afterward be recalled, or to neglect to provide remedies like this to which the Supreme Court calls attention. Land grants call for the construction of a railroad within a given time, yet by their terms the grant is not forfeited if the road is not built, and large bodies of land are withheld from settlement, simply

because Congress has, negligently or otherwise, so decreed it. The public's complaint in such cases should be directed to their own agents, who alone had power over the matter, and not to the railroad companies, which are formed for the advancement of the interests of their stockholders, and, like other business enterprises, obtain for themselves all the privileges and advantages they can get.

Our table of October earnings, published this week, has returns from 82 railroads, whose aggregate mileage and earnings and average earnings per mile were:

	1885.	1884.	Increase.	P. c.
Miles	66,480	64,825	1,655	2.6
Earnings	\$43,196,575	\$42,053,827	\$1,142,748	2.8
Earn. per mile	650	640	10	0.1

Thus the earnings per mile were practically the same this year as last, while in previous months the percentage of decrease in earnings per mile had been:

Jan.	Feb.	March.	Apr.	May.	June.	July.	Aug.	Sept.
7.0	1.2	9.5	11.1	4.8	4.8	9.9	4.0	

Thus October, by this very full report, including more than half the railroad in operation in the United States, shows a much better result than any previous month of the year, while November, judging by the reports that have come in so far, will be an improvement on October.

Chicago, Burlington & Quincy Earnings in October.

The gross earnings of the Chicago, Burlington & Quincy last October were not only larger than in any previous month of this year, but also larger than in any month of any other year except September, 1883; and the net earnings were the largest in the history of the road without any exception. September is usually its month of largest earnings, and was so in 1884, 1883 and 1881, but October led in 1880 and 1882 as well as this year.

The mileage worked (approximate this year), gross and net earnings, and working expenses in October for six successive years have been:

Year.	Miles.	Gross earnings.	Expenses.	Net earnings.
1880.....	2,712	\$1,934,762	\$780,500	\$1,154,202
1881.....	3,168	2,031,001	898,277	1,132,724
1882.....	3,230	2,270,444	963,387	1,307,057
1883.....	3,264	2,742,480	1,115,246	1,627,234
1884.....	3,467	2,83,597	1,177,661	1,505,936
1885.....	3,572	2,858,257	1,190,647	1,667,610

Compared with last year the increases are:

Amount.	Gross earnings.	Expenses.	Net earnings.
Per cent.	\$174,600	\$12,986	\$161,614

6.5 1.1 10.7

The increase in gross earnings is not so great as on the great systems farther north, the Northwestern having gained \$269,757, and the Milwaukee & St. Paul \$352,205 in October, against the Burlington's \$174,600, but as there was very little increase in working expenses, the gain in net earnings was considerable, and the more important because there was a large decrease in net earnings in August and a considerable one in September, so that the gain in October indicates a turn in the tide, such as there has been on many Northwestern railroads. This is further confirmed by unofficial reports that in the first week of December the earnings were larger than last year by \$11,000 per day. The increase in October is the more favorable because the earnings were more favorable in that month last year than in most other months, the decrease from 1883 having been but \$58,883, whereas in September it was \$202,055, and in November \$328,883.

For the ten months ending with October, the gross and net earnings and working expenses of this railroad have been:

Year.	Gross earnings.	Expenses.	Net earn.
1880.....	\$17,064,015	\$7,823,286	\$9,241,329
1881.....	17,454,832	8,790,182	8,664,650
1882.....	17,324,323	9,033,139	8,291,184
1883.....	21,376,677	10,706,793	10,669,884
1884.....	21,189,422	10,967,383	10,222,039
1885.....	21,908,397	11,791,032	10,117,345

The gross earnings and working expenses for the ten months were larger this year than ever before, but the net earnings were \$104,694 (1 per cent.) less than last year, and \$552,539 (5.2 per cent.) less than in 1883.

If the October improvement continues through November and December, as is quite probable, the net earnings of this road are likely to be larger than last year and nearly as great as in 1883, when they were largest.

A Long Freight Train.

A "long freight train" performance is reported this week which, if authentic, is apparently what is claimed for it, the greatest on record. The report is of a train on the "Mississippi Valley" (Louisville, New Orleans & Texas) Railroad, which started from point 122 miles north of New Orleans with 62 cars of cotton and two caboose cars, and at the two succeeding stations picked up 88 cars more, going into New Orleans with 150 loaded freight cars and two caboose cars, all hauled with one locomotive. Of these cars 134 were loaded with cotton, 10 with staves and 6 with miscellaneous loads. The length of the train was 5,370 ft., or 90 ft. over one mile of loaded cars, being (if correctly given) about 35 ft. per car which is a large average, and the slack is stated to have been 235 ft., which, as it would amount to something over a foot and a half per car, we take the liberty of questioning. The total weight of the train is stated to have been:

Total.	Total tons.	Tons per car.
Load (4,627 bales of cotton).	922,42	6.15
Dead weight engine and train	1,799.00	11.45

Total..... 2,721,42 17.60

Sixty tons being allowed for the engine.

The line runs through the Mississippi River bottom, nowhere (south of Vicksburg) very far from the river, and is probably as nearly on a dead level as any equal length in the

country (the bluffs reaching the river only at a few points), but with a very slight down grade. The whole average fall of the Mississippi from St. Louis is only some 5 in. per mile, and near the mouth of the river it is much less. The utmost probable fall for long stretches of this line is about 1 ft. in 10,000, or say 0.2 lbs. per ton assistance from gravity.

Calling the line level, a resistance of 5 lbs. per ton would demand an adhesion of 13,607 lbs., which, for a maximum adhesion of one-third of the weight on drivers, would require the latter to be only a little over 40,000 lbs. Unfortunately, the class of engine is not stated, but it was probably of the ordinary 8-wheel type, with at least 60,000 lbs. on the drivers, so that it will be seen that there is nothing inherently impossible or improbable in the performance, so far as mere haul is concerned, if the grades at stations were reasonably favorable for stopping and starting. In Zerah Colburn's early experiments on the Erie, for example, made in 1854 with an engine having but 40,050 lbs. on the drivers, a train of 100 loaded cars weighing 1,711.6 tons was hauled up a grade of 6.14 ft. and over a 1-degree curve, at five miles per hour, without help from momentum. Gravity here added 2.4 lbs. per ton to the rolling friction, and taking the lightness of the engine into consideration, it was a more remarkable performance, in one sense at least, than that reported from New Orleans.

But this performance on the Erie was only for a mile or two, with an engine and train behind to add or take off cars as from point to point it was found necessary, and with no question of stopping and starting involved. To handle a train under ordinary operating conditions is a very different matter, and for a train so handled we can discover no record at all approaching this performance, even if the locomotive were much heavier than we suppose it to have been. One mile and 90 ft. of loaded cars hauled on a level grade for over 100 miles, and probably making one or two stops in that distance, if it is not the greatest performance on record, must be very close to it.

Certainly it is far in advance of anything which has appeared in these columns, although we have recorded at various times some very remarkable performances. Perhaps the greatest heretofore was recorded in our issue of July 15, 1881, on the Northern Central, where 183 empty box cars, 1 loaded car, 2 cabooses and 1 dead engine were hauled a considerable distance (some 20 miles, we believe) with the assistance of a slight down grade. Another, in the same issue, was of 175 cars, 80 loaded, hauled by one Consolidation engine between Harrisburg and Columbia; but this also was with favoring grades. A year ago (Aug. 29, 1884) a record of 105 cars, 82 loaded, was given for Morgan's Louisiana & Texas road, hauled by one 18 x 24 Baldwin engine, which was justly regarded by the makers of the engine as very remarkable. March 23, 1883, a record of 200 empty coal cars, 70 of them 8-wheel, appears for a Consolidation on the Lehigh Valley, and it is also alleged that the Lehigh Valley on one occasion handled 593 empty 4-wheel coal cars in one train, although how and where it handled them we have not been able to discover. Aug. 5, 1881, a record appears from the wilds of Northern Michigan, for the Chicago & Northwestern, of 101 loaded cars, carrying 800 tons, hauled down hill for 68 miles, which is with cheerful confidence "set down as the heaviest train ever hauled on this or any other road a distance of 68 miles by one engine."

These are the best, but in the past few years many other such records have appeared. Recently (Aug. 22, 1884) some one thought 76 stock cars (empty, we infer), hauled by a 15 x 22 engine, remarkable enough to put on record. But none of them compare even approximately with this latest record from the Louisville, New Orleans & Texas, when all the circumstances are taken into account. The difficulty in starting so long a train must have been great, and it would have been all but impossible to handle it over many breaks of grade, even had the motive power been sufficient, without its breaking in two.

Chicago through rail shipments eastward for the week ending Dec. 5, by the incomplete report, including only flour, grain and provisions this year and last, but by the correct report, including all freights, in previous years, have been, in tons :

	1880.	1881.	1882.	1883.	1884.	1885.
50,203	56,768	23,790	44,592	50,564	41,228	

Thus the shipments this year were nearly a fifth less than last year; probably, including the higher class freight, they were only about a tenth less than in 1880 and 1881. The figures given for 1882 include only the shipments made at an advanced rate that went into effect that week, which was not one-third of the whole, probably.

The total shipments and the percentage going by each railroad in each of the last six weeks have been :

Tons :	Week ending.					
	Oct.	Nov.	Nov.	Nov.	Nov.	Dec.
Fleur	3,644	3,915	4,571	4,249	6,534	8,516
Grain	5,259	14,680	15,114	18,646	36,246	22,569
Provisions	7,800	8,901	9,665	11,593	11,537	10,443
Total.....	26,769	27,586	29,890	34,525	54,317	41,228
Percent :						
C. & Grand T.	7.9	11.4	10.7	8.6	14.2	16.5
Mich. Cen.	21.6	18.4	19.8	20.0	27.6	18.0
Lake Shore	14.2	15.1	13.5	13.8	11.2	15.4
Nickel Plate.....	8.1	7.9	11.1	12.4	10.9	8.3
Ft. Wayne	19.8	21.0	17.5	19.8	14.3	21.1
C. St. L. & P.	13.1	11.4	15.6	14.4	9.8	10.8
Balt. & Ohio	8.1	7.4	7.9	6.2	6.2	7.7
Ch. & Atlantic ...	7.2	7.4	3.9	4.8	5.6	2.2
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

Thus the total shipments last week were 24 per cent. less than the week before, when they were greatly stimulated by the announcement of the advance in rates. Nothing was to be taken last week billed at the old rates, and if nothing were, the shipments were quite satisfactory, compared with pre-

vious weeks. The decrease from the previous week was almost wholly in grain, there having been a large increase in flour shipments (26 per cent.) and but a small decrease in provisions. Considering the way flour is shipped, chiefly by producers of immense quantities, who use great care to get the best rates, it seems strange that there should be an increase as soon as rates advanced, and we suspect that the bulk of the shipments actually paid the rate before the tariff of Nov. 23. If so, we may expect a considerable decrease hereafter.

The changes in percentages are remarkable, the aggregate share of the three Vanderbilt roads falling from 49.7 to 41.7 per cent., and that of the two Pennsylvania roads rising from 24.1 to 31.9 per cent.; the Chicago & Grand Trunk carried a much larger share than before for a long time, and the Chicago & Atlantic a much smaller one. The share of the Pennsylvania roads was still below their average, in spite of the increase.

The Fort Wayne carried 30 per cent. of the flour and 26½ per cent. of the provisions, but only 15½ per cent. of the grain; the Chicago & Grand Trunk 22 per cent. of the flour and 15½ per cent. of the grain, which are unusually large shares of these freights for it; but only 13 per cent. of the provisions, of which it sometimes carries 20 per cent. or more. The Michigan Central was far ahead in grain, taking 27½ per cent. of it, while it took but 10½ per cent. of the flour, and less than 4 per cent. of the provisions.

This distribution seems unnatural, and leads to a suspicion that some of it was secured by giving special advantage to the shipper, though much may be due to the supply of cars on different roads. Some have had so active a local traffic that they have not been able to spare for the poor-paying through traffic as many as they could have got freight for.

Rail shipments from Chicago are usually larger in December than in November, but usually not very much larger, and in 1883 they were smaller, though the close of navigation might be expected to increase them; but when winter shipments are very heavy, it is due usually to activity after December. But this has sometimes been because the winter rate was pretty well maintained in December and not afterward.

The last week of open navigation is noticeable for the large grain receipts at the Northwestern markets—the largest since October and a fourth more than the week before, a little more than in the corresponding week of last year (when the movement of the season was much greater than it has been this year), and also more than in 1883. The increase over the previous week was in both wheat and corn, and the corn receipts were the largest since September. What is most noticeable is the large receipts at Duluth, the market most disadvantageous for winter shipments. Its receipts in this week to Nov. 28 were 909,000 bushels, which is much more than in any previous week of this year, and exceeded but twice before in the short history of that market. Nearly one half of the total wheat receipts of the eight Northwestern markets were at Duluth this week. Meanwhile, the wheat receipts at St. Louis were the smallest since harvest, but its corn receipts were the largest since April. There may have been some movement of new corn already, which is felt at St. Louis sooner than at the other markets, but new corn is not necessary to make large shipments, as it was last year when there was very little old corn in the country.

The receipts for the week in question probably were largely shipments made the previous week to take advantage of the old rail rates to the seaboard.

The grain fleet wintering at Chicago includes 33 propellers and 71 schooners, with an aggregate capacity of 4,868,000 bushels of corn. The lumber carriers (which will continue to make trips in December until the weather becomes severe) include six propellers and 92 schooners, and there are eight propellers and two schooners there not credited to either class. Three grain charters were made at Chicago Nov. 30, though hull insurance expired at noon on that day. The rate obtained for wheat to Buffalo was four cents a bushel, which is the highest of the season, but usually is considered only a fair fall rate.

The Union Pacific shares the increase in gross earnings reported by so many Western railroads, having in October an increase over last year of \$119,413, or 4½ per cent.; but this leaves it considerably below its earnings in years previous to 1884, its October earnings having been :

1881.	1882.	1883.	1884.	1885.
\$2,996,201	\$3,035,275	\$2,948,059	\$2,619,214	\$2,768,727

The net earnings last October were \$196,436 (15½ per cent.) more than last year; but they were also \$204,119 less than in 1883. For the ten months ending with October the gross earnings of the Union Pacific have been \$223,936 (1½ per cent.) more than last year, but \$2,620,454 (11 per cent.) less than in 1883; meanwhile the working expenses were \$902,605 (8½ per cent.) more than in 1884, and \$976,680 more than in 1883, so that the net earnings are \$678,669 (8 per cent.) less than last year and \$3,597,134 (31½ per cent.) less than in 1883. They were this year \$7,818,624, which is just about enough to pay the fixed charges and dues to the government.

The exports of grain from Russia in 1884 amounted to 220,650,000 bushels, against 238,684,000 in 1883. In 1884 wheat was less than a third of the total shipments, the exports of oats being 61 millions; of rye, 46 millions; of barley, 25½ millions, and of Indian corn, 10½ millions, against 68 millions of wheat.

Although Russia has a long border on Western Europe, penetrated by several railroads, comparatively a trifling of its grain exports go by rail—in 1884 about 33,000,000 bushels

out of the 230 millions. This is doubtless partly because the country next west of Russia—Prussian and Austrian Poland and Roumania—is itself a grain-exporting country, but chiefly, doubtless, because the rail rates are too high. In 1884 41,820,000 bushels were exported at Odessa and 37,400,000 at Cronstadt (St. Petersburg harbor); 26,600,000 at Libau, a Baltic port not far north of the Prussian border; 12,300,000 bushels at Riga and 10,000,000 at Reval, not far south of St. Petersburg. In all 93,300,000 bushels went from Baltic ports and 78,000,000 only from Black Sea ports, which are commonly supposed to command the chief Russian exports. From the Baltic ports to London is not much further than from Chicago to Buffalo, while from the Black Sea to Liverpool is as far as from New York to Liverpool.

It is remarkable that above 3,000,000 bushels of grain were exported from Archangel, on the Arctic Ocean, about latitude 67°, or as far north as the *north* end of the Hudson's Bay, and some 1,200 miles north of the latitude of Winnipieg. It is not nearly so cold in this latitude in Europe as in America, however.

The total value of the Russian grain exports last year is given at \$232,000,000, reckoning the rouble at its coin value.

The letter of Mr. C. Shaler Smith in another column calls attention to a little used detail of bridge construction which is worthy of attention as guarding against a danger which has proved real in many cases, that a sudden blow against the end-post from a derailed car, or otherwise, may destroy a span by a comparatively light blow on its most exposed and most vital member. Another precaution to accomplish the same end as the "collision strut" which Mr. Smith describes, and which has the merit of being available for old as well as new bridges, is merely the planting of a heavy post in front of and a short distance from the end-posts, sufficiently strong to divert or greatly check a car off the track. This is so inexpensive a precaution that it might well be adopted at all through bridges. There have been instances where the end-post has been seriously crippled, and even practically destroyed, without causing the fall of the bridge, but the chances are always against such a fortunate result, and barring that possibility, it is safer for those on the train, as well as for the pockets of the company, to take the chance of running against the post rather than the end of the bridge.

Record of New Railroad Construction.

Information of the laying of track on new railroad lines is given in the current number of the *Railroad Gazette* as follows :

Dublin & Wrightsville.—Extended southwest to Benton, Ga., 5 miles.

Fairmont, Morgantown & Pittsburgh.—Track laid from Fairmont, W. Va., north to Little Falls, 14 miles.

Fremont, Elkhorn & Missouri Valley.—Extended north to Buffalo Gap, Dak., 47 miles.

Hanover Junction, Hanover & Gettysburg.—Extended from Gettysburg, Pa., southwest to Ortonna, 8 miles.

Indiana, Alabama & Texas.—Extended north by west to Newstead, Ky., 10 miles.

Oregon Railway & Navigation Co..—Track laid on the Pomeroy Branch from Starbuck, Or., south 8 miles.

San Antonio & Aransas Pass.—Extended from Calveras Creek, Tex., southeast to Floresville, 19 miles.

Saratoga & Almaden.—Track laid from Murphy, Cal., east 3 miles.

Sinemahoning Valley.—Extended to Austin, Pa., 2 miles.

This is a total of 116 miles on 9 lines, making 2,639 miles thus far reported for the current year. The new track reported to the corresponding date for 14 years has been :

	Miles	Miles	
1885.....	2,639	1878.....	2,243
1884.....	3,026	1877.....	1,594
1883.....	5,046	1876.....	2,283
1882.....	6,648	1875.....	1,264
1881.....	7,601	1874.....	1,808
1880.....	5,836	1873.....	3,006
1879.....	3,594	1872.....	7,065

These figures include main track only, second tracks and sidings not being counted.

NEW PUBLICATIONS.

Transactions of the American Society of Mechanical Engineers, Vol. VI., 1885.

The scientific activity of this Society would seem to be increasing, to judge from the size of this volume, which is nearly double the size of last year's publication, or that of any previous year. This Society publishes this year considerably more matter than has been published in the same time by the American Society of Civil Engineers, and nearly as much as the Institute of Mining Engineers, and many of the papers are of a high order of merit, while few or none of them are such as to seem unworthy of the prominence given them.

Among the more generally interesting and valuable papers of the volume are those by C. J. H. Woodbury on the "Friction of Lubricating Oils," J. M. Ordway on "Non-conducting Coverings for Steam Pipes," J. T. Henthorn on the "Resistances of Engines and Shafting," S. C. Henning on "Testing Apparatus," and the report of the Committee on Boiler Tests; but this selection is somewhat invidious, as many unspecified papers seem equally worthy of mention, especially to those interested in the particular topics to which they relate.

The same practical identity between the topics of many of the papers published by this Society and by the Society of Civil Engineers, on which we commented last year, continues. Out of the 34 papers in this volume, 18 are of a char-

acter equally appropriate to the publications of the other society mentioned, and nearly half the remainder would seem in no way unusual or out of place in its *Transactions*.

The line where civil engineering ceases and mechanical engineering begins is a hard one to draw—in fact it cannot be drawn exactly, as is evident from the fact that both societies welcome both civil and mechanical engineers to their membership and have many members in common. This unification of civil and mechanical engineering has gone so far in England that the membership of the Institution of Civil Engineers is more "mechanical" than "civil," as those terms are commonly understood, and that institution is distinctly the society to which engineers of all kinds who have the proper standing gravitate, although special organizations of mechanical engineers exist there as here. The tendency here is rather to a distinct separation of what must after all be regarded as merely two closely related branches of the same profession.

The discussions of the mechanical engineers' papers are, with few exceptions, hardly what should be desired. They appear to be, for the most part, merely extemporaneous comments at the meetings, and a more general preparation of written discussions would have added much to the value of several of the papers.

The Civil Engineers' Convention on Public Works

The convention called by the Civil Engineers' Club of Cleveland to consider the standing of engineers employed on the public works of the United States, met in Cleveland, O., Dec. 3, and continued its sessions for three days. Delegates were present from 15 societies of engineers. Mr. L. E. Cooley, of Chicago, was chosen Chairman, and Mr. Wm. T. Blunt, Secretary.

The purpose and work of the convention is expressed in the following statement or address prepared by a committee and adopted by the convention:

"The foremost nations of the old world have organized systems of internal improvements. The United States at present has no such system. The marvelous development of this great country demands some adequate organization of such a system."

"In the formation of such an organization advantage should be taken of the best features of the system of other nations."

"The main reason for the success of such works in foreign countries is due to the fact that they are executed under a civil administration, although the governments themselves, in other respects, are more essentially military than our own."

"The distinguishing feature of these organizations is the employment of the best available talent, of men especially fitted by education, training and experience, to design and execute such works."

"Under our present method the government cannot possibly secure such trained skill. The reason is that no emoluments or reputation, commensurate with the service rendered, or equal to what can be obtained on other civil works, are attained on the public works of our government."

"These facts deter men of experience from entering the service of the government, and also those who have gained experience therein, from remaining in its employ."

"Recognizing that a comprehensive system of public works is necessary, we respectfully suggest that Congress should be asked to establish a Civil Bureau of Public Works; the basis of organization of this bureau to be made the subject of study, and report, by a board appointed by the President of the United States; said board to consist of seven members, three military engineers, three civil engineers, and one member of the legal profession."

The Convention, in order to continue the work it has begun, resolved to organize a Committee of National Public Works, to which each engineering society in the United States is invited to send a delegate.

After the adjournment of the Convention, the temporary Committee of National Public Works met and organized by electing L. E. Cooley President; Wm. T. Blunt, Secretary; L. E. Cooley, E. L. Cortherell, J. B. Davis, John Eisenmann and Augustus Kurth, Executive Board. The Committee then adjourned subject to the call of the President.

Speculating on Injunction Suits.

President Depew, of the New York Central, speaking of the suit to enjoin the West Shore lease, said last Monday :

"As soon as the injunction was granted, a whole host of New York brokers sent their representatives to Syracuse and established branches, with private wires here. As soon as these represented reached Syracuse they camped in the Court House, made the acquaintance of the janitor and all the tipstaves and constabulary of the town, and began to report to their principals here." Then the fun began. Every afternoon I was visited by the brokers, who said to me : "Look here, Mr. Depew, just help us to decipher these, so we can tell best how to operate."

"Dispatch No. 1: 'Judge now trying a case. Looks agitated.'

"Dispatch No. 2: 'Case still on. Judge apparently taking more interest.'

Other brokers would come in with another batch reading :

"Dispatch No. 1: 'Judge just in consultation with a red-haired man on the bench.'

"Dispatch No. 2: 'Red-haired man just left. Has gone to lawyer's office. Looks pleased.'

"Dispatch No. 3: 'Red-haired man has come out of lawyer's office looking glum.'"

"All this ad infinitum," said Mr. Depew, "and these parties operating in tens of thousands of shares on the strength of such dispatches. Why, isn't it ridiculous? It seems to me, anyhow, that this whole business of speculating by injunction deserves attention. All that is wanted is a speculator, a lawyer and the holder of one share of stock, and, given these, with an injunction, the holder of a single share of stock can defeat, temporarily at least, the wishes of \$89,999,900 out of a capital of \$90,000,000. There should be a limit to the injunction business, and it seems to me that unless the holders of an interest representing one-tenth part of the whole unite, none should be granted."

Mr. H. J. Jewett and the Chicago & Atlantic Railway.

Some articles having appeared in the Cleveland *Leader* reflecting on Mr. Jewett, late President of the Erie, for keeping control of the Chicago & Atlantic Railway after his connection with the Erie ceased, and managing the first-named road in some respects in opposition to the wishes of the Erie, Mr. J. Edwin Conant, surviving partner of the firm of

Conant & Smith, who built the Chicago & Atlantic, wrote that paper a letter, from which we extract the following :

When Col. J. Condit Smith and myself, constituting the contracting firm of Conant & Smith, entered into negotiations with the New York, Pennsylvania & Ohio and the Erie companies for aid in the construction of the Chicago & Atlantic road, our communications at first were generally with the representatives of the New York, Pennsylvania & Ohio Co., with the perfect understanding, however, that the Erie was to be a party and the main party to the contracts before their final conclusion.

At the proper time Mr. Jewett was brought into the negotiation, and after the general features of the arrangement were agreed upon, the question arose as to who should be the trustee for holding and representing the stock. Mr. Jewett urged the propriety of making the Erie Co., through its representative, the recipient of that trust. To this, Colonel Smith, then living and representing the firm, emphatically objected and refused to agree. He and I had discussed the matter fully between us, and concluded that we were willing to trust Mr. Jewett or his appointee, but we did not know who might in a few years control the Erie Co., and we were unwilling to run that risk. This view of the case finally prevailed.

It never was the intention to vest that power or trust in the Erie Co., and any statement to the contrary is untrue.

At about the time Mr. Jewett resigned the presidency of the Erie, he had an interview with the contractors—who then, as now, hold the bulk of the stock—and said that he feared, the Erie Co., as then about to be officered, would not be satisfied with the trust as it then stood, and that he was very anxious to be relieved of it, and proposed that, if proper terms could be made, it would be advisable to have the New York, Pennsylvania & Ohio lease extend over the Chicago & Atlantic road, or to make such arrangements as would have that effect; and he was authorized and did make that proposition to the succeeding President of the Erie Co., to which no response was ever made.

After the death of Colonel Smith, his brother, Hon. Samuel B. Smith, presented, with Mr. Jewett's consent, this question to the President of the Erie, but received no answer whatever.

The Erie board, previous to Nov. 1, 1884, had ordered the interest on the Chicago & Atlantic bonds, which matured on that day, to be paid, and the money was said to be provided for that purpose. It was on that day Mr. Jewett's resignation took effect, and his successor was installed. Without any explanation whatever, other than a desire to look into the Chicago & Atlantic contracts to discover if there were not some legal defects therein, the first act of the President-elect was to refuse to pay that interest, which he still continues to do, as well as all subsequent accruing interest.

Would it have been proper for Mr. Jewett, even if he had the power, under such circumstances, to transfer to the Erie Co. the trust reposed in him, or was it to be expected that the parties in interest would consent to his doing so?

When the representative of the bondholders visited this country to see if there was any possibility of their settling with the Erie, Mr. Jewett made the same statement to him he did previously to the contractors, that he desired to be relieved of the trust; that so far as he had the power, he would second any arrangement he and the stockholders might agree to, and offered to surrender the trust.

The representative was here several weeks, in constant communication with the President of the Erie Co., but utterly failed to arrive at any understanding whatever.

In the interest of fair dealing, therefore, is there any justice in the criticisms which have been so freely indulged in of Mr. Jewett?

TECHNICAL.

Locomotive Building.

H. K. Porter & Co. in Pittsburgh have just completed the last locomotive of their foreign orders. They have now orders on hand for 13 locomotives for different parts of the United States, and are running their works full time.

The Schenectady Locomotive Works, in Schenectady, N. Y., have just received an order for 50 locomotives, and the work on this order, which will begin Jan. 1, will keep the shops busy for several months. It is expected that the firm's employees will be increased. During the 11 months of the present year 104 locomotives have been built.

The Car Shops.

The Buffalo Car Manufacturing Co. is building 100 coal cars for the Fall Brook Coal Co.

The Michigan Car Co. in Detroit, Mich., is building 500 freight cars for the Michigan Central road, and is also repairing and rebuilding a large number of cars for the same road.

The Indianapolis Car Works have taken a contract to build 500 box cars for the Chicago, Milwaukee & St. Paul road. These cars are to be 34 ft. long, and are to have a capacity of 20 tons each.

Car Couplers.

The Ames Car Coupler is now being placed on the freight cars of the Michigan Central road. The shops of that company are equipping an average of 6 cars a day with that coupler, and it is also being placed on 500 new cars which are being built for the road in Detroit. The same coupler is also to be placed on a number of cars which are being built for the Fall Brook Coal Co. in Buffalo.

Bridge Notes.

The Southern Bridge Co. has just been incorporated in Birmingham, Ala., to build iron, combination and wooden bridges. The capital stock is \$25,000, with the right to increase to \$100,000. The incorporators are E. W. Linn and W. J. Cameron, of Birmingham.

The city of Omaha, Neb., invites proposals for the construction of a viaduct over the tracks of the Union Pacific and the Burlington & Missouri River roads in that city. Bidders are requested to put in proposals for a viaduct with 20-ft. roadway and one with 30-ft. roadway. Bids will be received until Jan. 9 next.

Iron and Steel.

Sarah Furnace near Ironton, O., has been leased to Cincinnati parties, who will put it in blast as soon as the necessary repairs can be made.

The New Jersey Steel & Iron Co. in Trenton, N. J., is building extensive plant for the manufacture of steel by a new process.

Conewago Furnace at Middletown, Pa., is expected to go into blast next week.

Ella Furnace in West Middlesex, Pa., is to be repaired and started up as soon as possible. It has been leased to Rhodes & Co., of Cleveland.

The Western Steel Co. is getting its works in Carondelet, Mo., in running order, and has already started up one of its furnaces.

Manufacturing and Business.

Mr. Walter Chur has been appointed General Manager of the Hoole Manufacturing Company, with office at No. 53 Great Jones street, New York. Mr. E. B. Wishaar, Assistant to

the President, has resigned, dating from Nov. 30. All communications relative to orders should be addressed to the Hoole Manufacturing Company.

The Rail Market.

Steel Rails.—Not much new business is reported, and the eastern mills are generally holding prices firmly at \$34@\$35 per ton. The report that the Chicago, Burlington & Quincy Co. had placed an order for 10,000 tons of rails in England is confirmed, but the reasons for this order have not been made public.

Rail Fastenings.—Prices are firmer, with increased demand. Spikes are quoted at 2.10c. per lb. in Pittsburgh; track-bolts at 2.60@2.80c., and splice-bars at 1.65@1.75c.

Old Rails.—An increased demand for old iron rails is reported and prices are firm, the stock on hand being small. Sales are reported at \$18.50@\$19.50 per ton at tidewater for ordinary qualities and \$20 for doubleheads. Old steel rails are quoted at \$19@\$20 per ton in Pittsburgh.

St. Louis Engineers' Club.

This club met in St. Louis, Nov. 18, President Moore in the chair, and 17 members present.

Wm. B. Knight was elected a member. Executive Committee recommended that the meetings be held on the first and third Wednesdays of each month during the session. On motion the recommendation was adopted.

The Secretary then read a programme for the winter.

Dec. 2—C. M. Woodward—Theory of Ammonia Refrigerators.

Dec. 16—Thos. J. Whitman—History of the St. Louis Water Works.

Jan. 6—J. A. Seddon—Cross Sections of Uniform Flow in River Physics.

Jan. 20—P. M. Bruner—The Use of Hydraulic Cements.

Feb. 3—Chas. C. Brown.

Feb. 17—Chas. W. Melcher—The Theory of the Sustaining Power of an Air Jet.

March 3—Robt. E. McMath—The Future Drainage of St. Louis.

March 17—A. P. Man—The Determination of Openings for Bridges and Culverts.

April 7—W. Paul Gerhardt—Disposal of Household Waste.

April 21—Geo. H. Pegram.

May 5—S. Bent Russel—Water Supply for Fire Service.

May 19—W. H. Allderdice.

June 2—Report of Committee on Smoke Prevention.

It was ordered that the Executive Committee confer with the directors of the Mercantile Library in regard to providing a room for the Club in the new building, authorizing it to purchase a share of the perpetual membership stock.

Prof. J. B. Johnson read a paper on the Solar Azimuths by Transit Attachments and Base Line Measurements by the Steel Tape. General discussion followed.

On motion a nominating committee consisting of Messrs. J. A. Seddon, C. W. Melcher, Ed. Flad, J. A. Ockerson, and S. B. Russel was appointed by the Club, and it then adjourned.

A Locomotive's Long Run Without Repairs.

Some incomplete figures have been recently published in relation to the long service without repairs of a locomotive in passenger service on the Boston & Albany road. We give herewith a full statement of its performance, furnished by Mr. A. B. Underhill, Superintendent of Motive Power:

"The following are the dimensions and record of passenger engine No. 137 built at the Boston & Albany shops:

Dimensions: Weight, 42 tons; cylinders, 18 by 22 in.; wheels, 68 in. diameter; boiler, 52 in. diameter; number of 2-in. tubes, 221; pressure, 160 lbs.

Record: This engine came out of shop April 23, 1888, and was taken in for general repairs Oct. 30, 1885, having run daily 30 months and 7 days, or 921 days, making a total of 184,726 miles. During this time the engine lost 12 days for repairs, and deducting this from the total number of days run, the average number of miles run per day is 208. No repairs were made until April 27, 1884, when the engine had run 78,812 miles. During portions of the months of April and June, and the whole of the month of May, 1885, the engine ran 400 miles every day, making (with extra trips Sundays) 10,910 miles in May, and a total of 26,740 miles in the above named months, an average of 8,913 miles per month. The 12 days lost and the causes were as follows: April, 1884, 1 day, broken equalizer. July, 1884, 4 days, tires turned, one broken driving-box replaced and throttle ground. July, 1884, 4½ days, broken piston-rod. May, 1885, one-half day, broken piston-rod, front cylinder-head and casing. September, 1885, 2 days, broken driving-box. The driving-boxes were of cast iron. Steel is now being used, and no more trouble is expected from that source.

"This record is furnished because it is a exceptional one and worthy of notice."

Cast-Iron Whistles.

The Chicago & Alton Railroad Co. is using a cast-iron whistle for its locomotives, and it is giving so much satisfaction that it is not intended to make any more brass whistles. The whistle consists of an oblong box with straight slots on each side for emitting steam. The steam strikes on a thinned edge of the casting, and the impact produces as much noise as the greatest enemy of the human race could desire. The most commendable features about the whistle are that it needs no repairs and seems indestructible and everlasting. The device is made by the Bass Foundry & Machine Works, Fort Wayne, and costs only \$3.—*National Car-BUILDER.*

Brake Tests.

The two stock trains of the Boston & Albany, 30 cars each, which run through each week from Chicago to Boston, are being equipped with the Turner-Beard momentum brake, which has been given some thorough tests on both that road and the Boston & Providence.

The Ober Car Ventilator.

Mr. William Y. Ober, of Salem, Mass., has invented a new system of ventilating passenger cars, which the Boston *Herald* describes as follows: "Beneath the centre of the car is located a large circular tub or drum in which a fan revolves with more or less rapidity, depending somewhat upon the speed of the train, a belt extending from one of the car wheel axles to the fan. A large duct or conductor leads from this drum on either side to a square conductor extending the length of the car immediately beneath the side, and from this tube reaches the interior, leaving openings between the windows. By an ingenious arrangement, the air from the fan is forced down upon a shallow body of water before reaching the large ducts, and thus all dust is effectively caught and prevented from entering the car. Car No. 71 of the Boston & Lowell Railroad has been fitted up with the apparatus, and yesterday, by invitation of the Ober Car Ventilator Co., some two score gentlemen made a trip to Nashua, N. H., by way of Lawrence and Lowell, for the purpose of practically testing the invention. This is the first car ever equipped with the apparatus, but it appeared to work perfectly. The pipes inside the car are about 1 in. in diameter, are nickel plated, and extend from the floor to a point just above the tops of the seats, ending in a flaring mouth, which can be turned in different directions at right angles with the tubes and can be

opened or closed at will. When the car was in motion, there was a strong current of air forced through the pipes into the car, while all dust and cinders were excluded."

THE SCRAP HEAP.

Train Wreckers.

The Elmira *Gazette* of Dec. 7 says: "That train wreckers are at work in the vicinity of Scio, where Erie train 4 was wrecked by a turned switch last Thursday morning, is evident. The engine of train 5 struck a truck of the burned sleeper while passing Scio early Saturday morning, damaging one of its cylinders and tearing away the steps of one or more of the coaches. It was a heavy shock and a close call for the train, which had to come to a stop for repairs to the engine before it could proceed further. Investigation indicates that this heavy truck had been moved up to the track to accomplish the nefarious work of wrecking the west-bound flyer. Other trains had passed during the night both ways, and the track was clear. This heavy truck, weighing a ton or more, did not move itself up to the track. It looks as though a deliberate attempt had been made to wreck the train and endanger life and property. The incident naturally causes great excitement, following, as it did, close upon the heels of Thursday morning's disaster at the same point, and a prompt and rigid examination of the affair is to be made. There has been about trouble enough at Scio, and it is high time that the true cause be ascertained and the proper punishment be meted out."

It is now stated that the Scio accident was due to the neglect of the operator, who failed to close the switch after a freight train had passed.

Something to Write About.

On board Erie train No. 4, which left the track at Scio this morning, was a little boy traveling with his father. When the train jumped the track and the cars went in all directions, the youth, who had been making notes of matters of interest to "write to mamma about," jumped from his seat in great glee, and, holding on to the arm of the seat for dear life, shouted, "Papa, here'll be something big to write about, won't there?"—*Elmira Gazette*.

He Wanted the Seat.

It was in a car on the Uniontown express yesterday afternoon, which leaves the city at 4:10 o'clock. The cars are always crowded out as far as East Liberty. In one of the seats sat a dude. He had placed a small grip-sack beside him, over which he threw his overcoat, and gave the passengers who came in a sort of look which meant that he had exclusive rights on the other half of his seat. A big brawny Irishman, a mill man from Braddock, who had been in town about one hour too long, and who was feeling quite funny, came down through the car with very unsteady steps. The distinguished-looking young man with the high collar and eye-glasses was looking out of the window, when the Irishman turned himself about and sat heavily down upon the grip-sack.

"Oh, you nasty man! You're sitting on my valise," exclaimed the young man as he tugged at his overcoat. "Get right out of my seat."

"An' who bees givin' you the right of two seats on this car," responded the Irishman, and his brow darkened in a threatening way. "Tak' your blasted things away thin."

The passengers were tittering and laughing in all directions. The young man gathered up his crushed grip sack, and the Irishman kept his seat until he got to Braddock.—*Pittsburgh Chronicle-Telegraph*.

A Queer Stranger With Queer Baggage.

A well dressed man jumped from a baggage car on the Pennsylvania Railroad at Elizabeth early yesterday morning. He carried a large satchel. As he acted in a manner which aroused suspicion he was arrested.

The satchel contained a 15-pound cannon ball and a map of the battle ground of Gettysburg. The man refused to give his name and was locked up.—*New York Herald*, Dec. 5.

Duties of Passenger Conductors.

General Superintendent Toucey has issued the following order to the passenger conductors of the New York Central: "Conductors at terminals must report for duty 30 minutes before time of departure of trains. They must see that their passengers are comfortably seated and cared for, assisting those who need assistance, and in such a manner as to satisfy all, and make them feel that they are in the care of one whose aim is to make their journey a pleasant one. They must know that their train is properly equipped and in good condition. After the train has started they must immediately proceed to examine the tickets of passengers, correcting any errors that may exist to the best of their ability, collecting the proper fare from those who have not obtained tickets, and making an entry of each fare collected before proceeding to the next passenger, and obeying the rules of the company explicitly. The regulation suits must be worn when on duty, and kept neat and clean. When off duty they should be changed for ordinary suits."

Rabbit Hunting with Locomotives.

The Portland *Oregonian* says: "The story of the locomotive engineer stepping out on the cow-catcher of his engine and picking up the wandering child which is about to be run over has become so common that it has lost its startling effect. The engineers on the Baker City Branch of the Oregon Railway & Navigation Co. are training themselves for something novel and startling in this style of thing, and will soon be able to gather in a whole flock of sheep or kindergartens while running at full speed. The country through which this road runs abounds in jack-rabbits. These long eared, long legged animals take great delight in racing with the locomotives, especially at night, when they get on the track and sail away in the glare of the headlight. They will not jump the track and they hold their own very well for a while, but the locomotive has the biggest lungs and the rabbit's wind gives out first. As soon as he begins to weaken the fireman gets out on the pilot, and just as the panting fugitive is about to pass under the engine he is snatched from the jaws of death in the most approved style. After considerable practice at this a man can pick up a whole drove of rabbits hand running. Firemen who have not the opportunity for this kind of exercise cannot expect to be so skillful in gathering in children as the boys on the Baker City Branch."

The Conductor's Old Friend.

The gentleman and his wife sat right behind us, on the Fort Wayne, running west. I gathered from their conversation that they knew the conductor when he was a boy. Presently as the great American punch combination went down the aisle, they stopped him. "You don't know us?" the gentleman asked. The conductor, with painful reluctance—it does grave a conductor awfully to admit to a passenger that there is anything he doesn't know—confessed that he didn't exactly place them, but—and then he waited for his cue. "Oh, well," said the traveler cheerfully, "you'll soon pick us up; we know you. Do you remember coming over to Jared Hardman's house in Mifflin township one night about 25 years ago?" and he went on to relate a boyish prank of unusual

atrocities and meanness; and when the conductor remembered himself as that boy and his passenger as Jared Hardman's son, the overjoyed traveler made the car ring with his wild laughter, and rang the conductor's hand, and pumped it, and called him old fellow, and seemed so glad to see him. So much gladder than the conductor appeared to be. Then his wife chimed in and related a worse one about the conductor, which the whole car enjoyed. Then the gentleman, his voice being rested, took about half the train into his confidence and rehearsed a reminiscence of the conductor's school-days that would have brought blushes of shame to the cheeks of a book agent. Then they asked if he remembered how he wanted to marry Jennie Harlan, and how she jilted him and married a barber. And did he remember the time he poisoned their dog? And the Christmas he got drunk and broke all the windows in the church? And the Fourth of July—ha, ha!—when he got into a fight with the Blower boys and was arrested and locked up—ha, ha, ha! They had two or three more of the same kind to tell, but in the midst of the narration the whistle blew for a station and the conductor tore himself away. He said he was glad to see them, but he didn't look it, and when they asked him to come back again he said he would, but he didn't. The pleasant couple seemed to miss their old friend, and noticing that I was observing them with considerable interest, the gentleman leaned forward after closely scrutinizing me and said, "How are you, sir? I beg pardon, but—your face seems very familiar to me—I don't know you, do I?" And so solemnly and earnestly that it frightened him, and as devoutly as ever I uttered a prayer in my life I said, "God forbid!" And I meant it.—*Burdette, in Pathfinder Guide*.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings of the stockholders of railroad companies will be held as follows:

Cleveland & Pittsburgh, annual meeting, at the office in Cleveland, O., Jan. 6.

Maine Central, annual meeting, at the office in Portland, Me., Dec. 16.

New York, New Haven & Hartford, annual meeting, in New Haven, Conn., Jan. 13.

Dividends.

Dividends on the capital stocks of railroad companies have been declared as follows:

Fitchburg, 2½ per cent., semi-annual, payable Jan. 1, to stockholders of record on Dec. 12.

Lehigh Valley, 1 per cent., quarterly, payable Jan. 15, to stockholders of record on Dec. 21.

Missouri Pacific, 1½ per cent., quarterly, payable Jan. 2, 1886, to stockholders of record on Dec. 19.

Morris & Essex (leased to Delaware, Lackawanna & Western), 3½ per cent., semi-annual, payable Jan. 2.

New York & Harlem (leased to New York Central & Hudson River), 4 per cent., semi-annual, payable Jan. 2.

Old Colony, 3½ per cent., semi-annual, payable Jan. 1 to stockholders of record on Dec. 3.

Oregon Railway & Navigation Co., 1½ per cent., quarterly; also 0½ per cent. extra, making 2 per cent. in all, payable Jan. 2.

St. Louis, Alton & Terre Haute, 2½ per cent. on the preferred stock, payable Dec. 18.

Western Union Telegraph Co., 1½ per cent., quarterly, payable Jan. 15, to stockholders of record on Dec. 19. The company falls from 1½ to 1¼ per cent.

Railroad and Technical Conventions.

Meeting and conventions of railroad associations and technical societies will be held as follows:

The *Transcontinental Traffic Association* will hold its next meeting in New York, on Monday, Dec. 14.

The *Central Passenger Committee* will hold its next meeting in Cincinnati, on Tuesday, Dec. 15.

The *American Society of Civil Engineers* will hold its annual meeting at the Society's House, in New York, on Wednesday, Jan. 20, 1886.

The *Master Car-Builders' Association Committee on Freight Train Brakes* will hold a meeting and hearing at the Locheil House, in Harrisburg, Pa., on Wednesday, Jan. 6, 1886.

The *Master Car-Builders' Club* will hold its regular monthly meetings through the winter at the rooms, No. 113 Liberty street, New York, on the evening of the third Thursday in each month.

The *New England Railroad Club* will hold its monthly meetings at its rooms in the Boston & Albany passenger station in Boston, on the evening of the second Wednesday in each month.

The *Western Railway Club* will hold its regular monthly meetings at its rooms, No. 103 Adams street in Chicago on the third Wednesday in each month.

Foreclosure Sales.

The *St. Louis, Hannibal & Keokuk* road was sold in St. Louis, Dec. 9, under foreclosure of mortgage, and bought for \$370,000 by Mr. John I. Blair, the largest holder of the bonds.

ELECTIONS AND APPOINTMENTS.

Baltimore & Ohio.—At a meeting held in Baltimore, Dec. 9, the board re-elected Mr. Robert Garrett President of the company.

Boston & Albany.—At the annual meeting in Boston, Dec. 9, the old directors were re-elected, as follows: Wm. Bliss, Henry Colt, George O. Crocker, John Cummings, Edward L. Davis, Jarvis N. Dunham, Edward B. Gillette, Moses Kimball, Jacob D. Rogers, James A. Rumrill, Charles S. Sargent, Mahlon D. Spaulding, Augustus L. Soule.

Boston & Maine.—At the annual meeting in Boston, Dec. 9, the following directors were chosen: George C. Lord, Nathaniel G. White, Nathaniel J. Bradlee, Amos Paul, James R. Nichols, Wm. S. Stevens, Joseph S. Ricker, Richard Olney, Samuel C. Lawrence, Frank Jones.

Brookville.—Office in Brookville, Pa.; the directors are C. M. Carrier, H. C. Fitch, T. S. Templeton, J. B. Henderson, R. Arthur, Jr., Charles Corbet, B. Klein, Ed. A. Fitch and B. Verstine.

California Southern.—Mr. H. B. Wilkins has been appointed General Passenger Agent, with office at San Diego, California.

Centralia & Chester.—Mr. S. L. Olmsted has been appointed Chief Engineer, and will have his headquarters at Centralia, Illinois.

Central Iowa.—Mr. E. L. Dudley, for some time past General Superintendent of this road, has been appointed General Manager.

Cheraw & Darlington.—At the annual meeting in Florence, S. C., Nov. 18, directors were elected: W. T. Walters, B. F. Newcomer, R. R. Bridgers, H. B. Plant, H. Walters, Thomas Frost, W. C. Coker, W. A. Carrigan, J. B. Breedon and C. P. Townsend. Mr. A. F. Ravenel, of Charleston, S. C., was elected President, in place of the late B. D. Townsend.

Chicago, St. Louis & Pittsburgh.—Mr. L. F. Loree has been appointed Engineer of Maintenance of Way of the Second and Fourth Divisions vice C. M. Bennett, transferred. To take effect Dec. 1.

Cincinnati Southern.—The Cincinnati Superior Court has appointed Mr. John Carlisle a member of the board of trustees, in place of Mr. Miles Greenwood, deceased.

Columbus & Maysville.—This road having been purchased by an Eastern syndicate, the following have been elected directors: E. P. Buell, I. H. Livingston and J. Edgcomb. Four of the old directors were retained. E. P. Buell was chosen President, and O. H. Livingston Vice-President.

Florida Railway & Navigation Co..—Receiver Duval has appointed J. E. Tucker, recently of Denver, Col., Commissioner of the lands of the company, in place of Arthur T. Williams, the appointment to go into effect Dec. 1. Mr. Duval has also appointed T. A. Phillips Assistant General Superintendent of the roads, with headquarters in Jacksonville.

Georgia.—Mr. L. A. Hemphill has been appointed Superintendent, with office in Augusta, Ga. He has been for some time past Master of Transportation of the road.

Hutchinson, Glencoe & Southern.—The office of this new company is in Glencoe, Minn.; the officers are Matthew J. Peppard, President; A. H. Reed, Vice-President; D. A. Adams, Secretary; G. K. Gilbert, Treasurer.

Jacksonville, Tampa & Key West.—Mr. A. Hendee has been appointed Master Mechanic, in place of C. J. Roberts, resigned. Mr. T. B. Herbert is appointed Master Carpenter.

Knox & Lincoln.—At the annual meeting in Rockland, Me., Dec. 2, the following directors were chosen: John T. Berry, Francis Cobb, G. W. Kimball, Rockland; E. K. O'Brien, Thomaston; E. O. Clark, Waldoboro; D. W. Chapman, Damariscotta; Edwin Flye, Newcastle; Henry Ingalls, Wiscasset; John G. Richards, T. W. Hyde, J. R. Kelly, Bath.

Lehigh Valley.—Mr. Robert H. Sayre has been chosen Second Vice-President of this company, and will have immediate charge of the operation of the road. Mr. Sayre was formerly for a number of years General Superintendent and Chief Engineer of the road, but left it some time ago to become President of the South Pennsylvania Railroad Co. He has always remained a director of the company.

Missouri Pacific.—Mr. Abraham Gould has been appointed Purchasing Agent.

Mobile & Ohio.—Mr. E. M. Wallace, late Master of Transportation of Morgan's Louisiana & Texas road, has been appointed to a similar position on this road, with headquarters at Jackson, Tenn. His jurisdiction will extend over the line from Cairo to Okalona.

New York, Fordham & Bronx.—This new company has these directors: C. W. Osborn, R. G. P. Segur, J. J. Slocum, John G. Wright, Samuel B. Benn, J. N. Brooks, Frederick N. Day, Robert O. Sherwood and George J. Gould. The directors elected Mr. Day President; George J. Gould, Treasurer; and Mr. Benn, Secretary.

New York, Lake Erie & Western.—Mr. R. H. Soule is appointed Superintendent of Motive Power, with office at Susquehanna, Pa., in place of Mr. F. M. Wilder, resigned. Mr. Soule was formerly on the Pennsylvania road, but for some time past has been Superintendent of Motive Power of the New York, West Shore & Buffalo road.

New York & New England.—At the annual meeting in Boston, Dec. 8, the following board of directors was unanimously elected, there being only one ticket in the field: William T. Hart, Charles P. Clark, Francis L. Higginson, Boston; Eustace C. Fitz, Chelsea; Jesse Metcalf, Providence; W. F. Sayles, Pawtucket, R. I.; Frederick J. Kingsbury, Waterbury, Conn.; George M. Landers, New Britain, Conn.; William D. Bishop, Bridgeport, Conn.; George G. Haven, New York; C. W. Amory, Boston; Russell Sage, New York; George M. Rice, Worcester; Robert C. Martin and Chester Griswold, New York; Stanton Blake, Boston; William D. Dinsmore, A. J. Leith, New York; William A. Tomer, Boston. The only new members of the board are Messrs. William D. Bishop and C. W. Amory, who succeeded William Seward Webb and Cyrus W. Field.

The board elected W. T. Hart Vice-President, re-elected Mr. Phippen Treasurer and Mr. Perkins Secretary, and voted to postpone the election of President until the next meeting.

New York, Providence & Boston.—At the annual meeting in Providence, in 1886, the following directors were chosen: Robert Knight, B. N. Lapham, Providence, R. I.; George Peabody Wetmore, Newport, R. I.; Nathan F. Dixon, Westerly, R. I.; Henry Howard, Coventry, R. I.; Henry C. Robinson, Hartford, Conn.; Samuel D. Babcock, Wm. P. Dixon, J. Boorman Johnston, George M. Miller, John L. Riker, New York. This is substantially the old board.

Northeastern (South Carolina).—At the annual meeting in Charleston, S. C., Nov. 19, the following were elected: President A. F. Ravenel; directors, R. R. Bridgers, W. T. Walters, H. B. Plant, B. F. Newcomer, C. O. Witte, H. Walters.

Palatka, Ocala & Homosassa.—The incorporators are John F. Dunn, M. D. Burnet, J. M. Blair, Ocala, Fla.; Joshua L. Chamberlain, Brunswick, Me.; Geo. W. Morse, J. C. Holman, Boston; William W. Penniston, Philadelphia.

Pensacola & Atlantic.—At the annual meeting at Pensacola, Nov. 27, M. H. Smith was re-elected President; W. D. Chipley, Vice-President and Land Commissioner; C. Quarier, Comptroller; R. K. Warren, Secretary; W. W. Thompson, Treasurer.

Pittsburgh & Connellsville.—At the annual meeting in Pittsburgh, Dec. 7, the following officers were elected: President, Robert Garrett, Baltimore; Secretary and Treasurer, J. B. Washington; Directors, Robert Garrett, Mendes Cohen, Charles Webb, Findley H. Burns, John D. Scully, C. L. Fitzhugh, Thomas M. King, George A. Berry, John McCleave J. J. Gillespie, W. H. Koontz, C. C. Markle. The road is owned by the Baltimore & Ohio.

Pittsburgh, Marion & Chicago.—The principal office is to be at New Lisbon, O., and the following are the incorporators: R. W. Taylor, W. B. Billingsley, William Phelps, Dan W. Firestone and J. A. Vance.

Providence & Springfield.—At the annual meeting in Providence, Dec. 2, the following officers were elected: Presi-

dent, William Tinkham; Clerk, Jabez C. Knight; Treasurer, Ernest W. Tinkham; directors, William Tinkham, John L. Ross, Horace A. Kimball and Edward Pearce, Jr., of Providence; Albert L. Sayles and James O. Inman, of Pascoag; Sidney Dillon, of New York.

Rumford Falls & Buckfield.—At the annual meeting in Portland, Me., last week, this company elected W. L. Putnam, President; Otis Hayford, Vice-President; S. C. Andrews, Clerk; R. C. Bradford, Treasurer; L. L. Lincoln, Superintendent.

Saratoga & Almaden.—Mr. Henry E. Brainard is Chief Engineer of this road, with office at San Jose, California.

Southern Passenger Committee.—Mr. Mercer Slaughter, for some time past General Passenger Agent of the Richmond & Danville, has been chosen Commissioner. The Executive Committee is as follows: B. W. Wrenn, East Tennessee, Virginia & Georgia; C. P. Atmore, Louisville & Nashville; G. A. Whitehead, Central of Georgia.

Staten Island Rapid Transit Co.—Mr. Charles Ackenheil, of Pittsburgh, has been appointed Chief Engineer.

Toledo, Columbus & Southern.—Mr. Jesse R. Stranghan has been appointed Chief Engineer.

Union Pacific.—Mr. Clement Hackney is appointed Superintendent of Motive Power, with office at Omaha, Neb., in place of Mr. I. H. Congdon, resigned. Mr. Hackney is now Master Mechanic of the Atchison, Topeka & Santa Fe road.

Washington, Ohio & Western.—Mr. Robert Bell has been appointed Superintendent of this road.

West Shore.—The officers of this company, successor to the New York, West Shore & Buffalo, are: President, J. C. Wright; Vice-President, Ashbel Green; Secretary and Treasurer, F. E. Worcester. Mr. Wright is a member of the firm of Drexel, Morgan & Co.; Judge Green was Receiver of the North River Construction Co.; Mr. Worcester has been for many years connected with the New York Central.

The directors of the company are: Joseph P. Ord, Englewood, N. J.; Ashbel Green, Tenafly, N. J.; Charles Lanier, Edward King, Edward D. Adams, J. Hood Wright, Charles H. Coster, George S. Jones, Howard Mansfield, Herbert E. Kinney, Charles Edward Tracy, George W. Knight, Francis Gordon Brown, New York.

PERSONAL.

—Mr. S. M. Brophy has resigned his position as Superintendent of the Washington, Ohio & Western road.

—Mr. M. V. B. Myrtle has resigned his position as General Freight and Passenger Agent of the Elmira, Cortland & Northern road.

—Colonel Robert Emmett has resigned his position as District Passenger Agent at Indianapolis of the Louisville, New Albany & Chicago road.

—Mr. Ransom H. Noble has resigned his position as General Agent of the passenger department of the New York Central & Hudson River road in Buffalo.

—Mr. Logan C. Newsom, Secretary of the Dowling Car Coupler Co., was married in Columbus, O., Dec. 2, to Miss Sallie Maybell Moupony. Mr. Newsom's many friends will extend their hearty congratulations.

—Mr. J. W. Cary, General Passenger Agent of the Lake Shore & Michigan Southern road, is in very poor health, and is at present unable to attend to the duties of his position. Mr. Cary has held his present position since the formation of the present Lake Shore Co., and was previously General Passenger Agent of the Cleveland, Painesville & Ashtabula.

—Mr. E. Culverhouse has resigned his position as General Manager of the Kansas & Gulf Short Line, to take effect Dec. 1. He has filled this position three years. By special request he accepted the appointment to take charge of the construction of this road and its general management until its completion, which was effected Nov. 1. He remains a member of the board of directors.

—The old and well-known banking firm of S. G. & G. C. Ward, of New York, will be dissolved and retire from business Jan. 1 next. This firm has for many years held the American agency of the London house of Baring Brothers & Co., and has represented that firm in many important railroad negotiations. The Baring agency will be transferred to the firm of Kidder, Peabody & Co., of Boston and New York.

—Mr. Isaac H. Congdon has resigned his position as Superintendent of Motive Power of the Union Pacific road. Mr. Congdon has been with the Union Pacific for 19 years, having been appointed General Master Mechanic in 1866, and receiving his present title three years ago. He had previously served on the Hartford & New Haven, the Cleveland, Columbus & Cincinnati and the Great Western roads, and is widely known as a master mechanic of experience and high standing.

—The death of Wm. H. Vanderbilt on Dec. 8 was caused by a stroke of apoplexy. He had apparently been in excellent health during the day, and was talking in his library with Mr. Robert Garrett, of the Baltimore & Ohio Co., upon business matters, when his speech suddenly became indistinct and he fell forward upon the floor. By the time the first doctor arrived, ten minutes after the attack, life was extinct. Death must have been almost instantaneous. A more extended notice will be found in another column.

TRAFFIC AND EARNINGS.

Coal.

Anthracite coal tonnage for the eleven months to Nov. 28, as given by the weekly reports of the companies, has been as follows for eight years past:

	Tons.	Tons.	Tons.
1885.....	29,302,597	1881.....	26,100,763
1884.....	28,325,931	1880.....	21,924,569
1883.....	29,463,065	1879.....	24,469,939
1882.....	27,085,442	1878.....	16,152,525

This year's tonnage has now passed that of last year, and is greater than that of any previous year except 1883. The remaining month of the year is likely to show about the same result.

Bituminous coal tonnages for the eleven months to Nov. 28 are reported as follows:

	1885.	1884.	Inc. or Dec. P. c.
Cumberland, all lines.....	2,554,607	2,672,063	D. 117,456 4.4
Huntingdon & Broad Top.....	153,740	181,185	D. 27,445 15.2
Bethel R. & Coal Co.	212,713	269,343	D. 56,630 21.0
Pennsy.-Pa. R. R.	2,634,525	2,879,808	D. 255,283 8.9
Clearfield.....	491,821	378,099	L. 113,722 30.1
Mountain District.....	1,165,311	1,107,441	D. 42,130 3.5
Pennsy.-end W. & Morel'd.....	982,757	892,698	I. 90,050 10.1
Total	8,185,474	8,480,637	D. 295,163 3.6

Here nearly all the districts show decreases, some of them considerable in amount.

Coke tonnages for the eleven months to Nov. 28 are reported as follows:

	1885.	1884.	Inc. or Dec. P. c.
Southwest Penna. R. R.	1,758,256	1,908,014	D. 140,758 7.8
Other districts, Pa. R. R.	569,127	428,592	I. 140,535 32.8
Connellsville, via Pa. R. R.	55,608	293,179	D. 237,571 81.1
Total coke.....	2,382,991	2,629,785	D. 246,794 9.4

Up to about the middle of October coke shipments showed this year a continuous decrease; since that time they have increased largely, probably on account of the revival in the iron trade, upon which the coke business so largely depends.

The anthracite coal tonnage of the Belvidere Division, Pennsylvania Railroad, for the eleven months to Nov. 28 was:

	1885.	1884.	Inc. or Dec. P. c.
Coal Port for shipment.....	105,258	112,459	D. 7,301 6.3
S. Ambry.....	515,436	610,594	D. 95,458 15.0
Local points on N. J. divs.	784,193	761,204	I. 22,589 3.0
Co.'s use	201,079	172,326	I. 28,753 16.0

Total

1,605,966 1,656,883 D. 50,917 3.1

Of the total this year 1,358,704 tons were from the Lehigh region and 247,282 tons from the Wyoming region.

The coal tonnage of the Pennsylvania Railroad for the week ending Dec. 5 was:

	Costl.	Coke.	Total.
Line of road.....	147,863	74,751	222,614
From other lines.....	103,388	874	104,262
Total	251,271	75,625	226,896

The total tonnage this year to Dec. 5 was: Coal, 10,573,-

695; coke, 2,431,259; total, 13,004,954 tons.

Railroad Earnings.

Earnings of railroad lines for various periods are reported as follows:

	1885.	1884.	Inc. or Dec. P. c.
<i>Eleven months to Nov. 30:</i>			
Buff., R. & Pitts.	\$116,145	\$1,049,797	I. \$66,348 6.3
Bur., C. R. & No.	2,826,605	2,509,008	I. 317,597 12.6
Canadian Pac.	7,034,634	6,237,597	I. 2,397,057 45.8
Central Iowa....	1,178,392	1,20,961	D. 151,569 11.4
Chi. & Alton....	7,268,675	8,016,593	D. 747,886 9.3
Chi. & East. Ill.	1,501,000	1,413,131	I. 87,869 6.2
Chi., Mil. & St. P.	22,075,939	21,252,000	I. 823,939 3.9
Chi. & Nor. west....	22,332,220	21,540,152	I. 792,068 3.7
C. St. P. M. & O.	5,360,615	5,358,983	I. 21,692 0.4
Chi. & W. Mich.	1,184,377	1,375,130	D. 187,758 13.6
U. S. St. L. & C.	2,167,448	2,231,686	D. 64,238 2.9
Denver & R. G.	5,644,328	5,144,007	I. 500,321 9.7
Det., Lan., & No.	1,122,419	1,242,217	D. 119,798 9.7
Ft. Worth & D.	451,391	437,200	D. 5,809 1.3
Grand Trunk....	13,878,608	15,676,375	D. 1,797,767 11.5
Gulf, Col. & S. F.	1,620,881	1,585,547	I. 35,334 2.2
Illinoia Central....	9,769,676	9,372,987	I. 396,689 4.2
Iowa lines....	1,484,529	1,558,347	D. 73,847 4.7
Ind., Bloom. & W.	2,178,418	2,134,079	I. 44,339 2.1
Long Island....	2,674,487	2,800,624	D. 73,863 2.8
Louis. & Nash....	12,485,763	12,365,852	I. 119,913 0.9
Mexican Central....	3,218,214	2,690,385	D. 527,829 19.6
Mil., L. S. & W.	1,225,902	1,028,728	I. 199,174 18.4
Mil. & Northern....	514,454	477,750	I. 36,084 7.7
Norther. Pac....	10,570,032	11,855,076	D. 1,279,044 10.8
Ohio Southern....	425,949	424,479	I. 1,470 0.3
St. L. & San F.	4,012,575	4,290,970	D. 278,404 6.5
St. P. & Duluth....	1,256,866	1,207,456	I. 49,440 4.1

Ten months to Oct. 31:

	1885.	1884.	Inc. or Dec. P. c.
Canadian Pac.	\$8,624,492	\$4,588,597	I. \$2,235,895 48.7
Net earnings....	2,082,179	2,755,362	I. 673,183 25.9
Gulf, Col. & S. F.	2,762,360	2,953,614	D. 191,254 6.5
Net earnings....	797,333	892,744	D. 95,411 10.7
Ind., Bloom. & W.	1,007,374	1,174,649	I. 165,275 15.9
Long Island....	403,062	247,772	I. 155,290 62.6
Net earnings....	10,117,346	21,189,422	D. 10,072,343 2.3
C. I. St. L. & C.	1,973,083	2,035,374	D. 62,291 3.1
Net earnings....	720,350	760,854	D. 40,504 5.3
Illinoia Central....	1,208,796	1,307,570	D. 938,774 6.7
Ind., Pa. & Ohio....	3,104,769	4,680,918	D. 556,148 11.9
Ohio & Miss....	3,004,748	3,143,850	D. 79,102 2.5
Net earnings....	854,327	688,318	I. 186,000 27.8
Union Pacific....	21,147,405	20,923,467	D. 223,938 1.1
Net earnings....	7,818,624	8,497,293	D. 678,669 8.0

Month of October:

	1885.	1884.	Inc. or Dec. P. c.

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RAILROAD LAW.

Killing a Dog.

In the case of Jenison against the Southwestern Railroad Co., the Georgia Supreme Court holds as follows:

1. A dog is not property except in a qualified sense, either at common law or under the statutes of this state. The owner may maintain an action of trespass *in et armis* for the wanton and malicious killing of his dog, but he cannot maintain case for its unintentional, though negligent, destruction; and where a dog was killed by a railroad train the presumption did not arise against the company, as in cases of injury to persons or property.

2. The facts in this case showed that no exercise of care on the part of the employés of the railroad would have averted the death of dog, and a non-suit was proper.

Speed of Trains in a City—Negligence.

In the case of Russell against the Central Railroad & Banking Co., the Georgia Supreme Court holds as follows:

1. The law requiring the checking of trains in passing a road crossing applies to the crossings of streets in a city. If the Legislature has conferred upon the municipal authorities power to regulate the running of the trains of a railroad over the streets of a city, *seems* that this would not nullify the general law, but would furnish an additional safeguard to save life and personal property. If the municipal authorities have not acted in the matter, no inference can be drawn of removal of restrictions on the speed of trains.

2. Where a railroad train came round a curve and approached a street crossing at a speed of 25 or 30 miles per hour, without checking its speed, running down grade, so as to render it impossible for the engineer to stop, or the owner of a horse and vehicle on the crossing to save them, the presumption of negligence resulting from an injury to the property was not rebutted. Nor did it appear that the owner could have saved the property from the injury.

The verdict was not excessive. This Court will not generally look closely into small matters of amounts of damage, after the jury have passed upon them and the presiding judge has approved their finding.

OLD AND NEW ROADS.

Arizona Mineral Belt.—It is stated that arrangements are being made to build at once 75 miles of this road, from Flagstaff, Ariz., southward. At Flagstaff it will connect with the Atlantic & Pacific road, and that company will give the new line a drawback on all business passing over the line.

Baltimore & Ohio.—This company's engineers have begun a final survey of the proposed extension of the Chicago division from Chicago Junction, O., eastward to Akron, where the line will connect with the Pittsburgh, Cleveland & Toledo, which is now controlled by this company. This line, which has been talked about for some time, will, if built, give the company a direct line from Chicago to Pittsburgh.

Bangor & Piscataquis.—The City Council of Bangor, Me., has voted not to accept the offer of the Maine Central Co. to purchase this road, which extends from Bangor to Moosehead Lake, and is almost entirely owned by the city. The offer of the Maine Central was to assume the city debt on account of the road, but the City Council believed that better terms can be obtained.

Boston & Albany.—The suit of the Attorney General of Massachusetts against this company, involving the disposition of some 25,000 shares of the stock of the railroad, which was sold by the state to the corporation, has gone to the full bench of the Supreme Court on an agreed statement of facts. The stock, it will be remembered, was distributed to the stockholders.

Boston & Lowell.—The suit of the Nashua & Lowell against this company, to recover certain amounts claimed to be due the Nashua & Lowell under the old traffic agreement, under which the two roads were operated jointly from 1858 to 1878, came up in the United States Circuit Court in Boston last week and was then argued. The suit is brought by the Nashua & Lowell Co., which claims that under the joint agreement charges were made to the joint earnings which properly belonged to the Boston & Lowell Co. alone, and the claim now is for the recovery of the amount so wrongfully charged and deducted from the joint net earnings.

Boston & Maine.—A bill in equity has been filed in Boston to restrain this company from leasing the Worcester, Nashua & Rochester road, on the ground that such a lease would be contrary to the laws of the state. At the annual meeting, Dec. 9, the stockholders voted to approve this lease and also the Portland & Rochester lease.

Brookville.—This company has filed articles of incorporation to build a railroad from Brookville, Pa., on the Low-Grade Division of the Allegheny Valley road, to the extensive saw-mills of Carrier & Co. The road will be only 2½ miles long.

Buffalo, New York & Philadelphia.—This company is now paying the interest upon the Oil Creek Railroad first-mortgage 6 per cent. bonds, which was due Oct. 1, but was not paid at that time.

Canadian Pacific.—This company makes this statement of earnings and expenses for October and the ten months to Oct. 31:

	October.	Ten months.
Gross earnings.....	\$915,833	\$6,824,492
Working expenses.....	523,041	4,142,313
Net profits.....	\$392,797	\$2,682,179

"The gain in net profits over the same period last year is for October, \$95,349; and from Jan. 1 to Oct. 31, \$1,906,817, or 245.9 per cent.

"The gross earnings for October include \$85,000 for carriage of construction material, as against \$93,000 during the same month last year, but as it was carried at absolute cost, the net result is not affected."

Central Vermont.—The *Boston Advertiser* says: "The contract made last summer between the Central Vermont and Grand Trunk, in which the former sold to the latter 4,570 shares of its capital stock—which is just one-half of the whole—covers a period of 30 years, with possible revision every five years. Each company is bound to consult the other as to through fares and freights, through trains, etc., and the free interchange of business in general. One of the provisions is as follows:

"That it is the declared intention of the parties hereto not to enter into arrangements with other companies for an interchange of traffic in competition with lines worked or controlled by either company parties hereto, except by mutual consent; but on the contrary they mutually agree to make use of their respective lines for the conveyance of all traffic which is controlled by them respectively and can be reasonably and properly forwarded by their respective lines; but this clause is not intended to exclude the Grand Trunk from forwarding or receiving traffic by way of their main line *via*

Island Pond and Portland, in the same manner as traffic has at any time heretofore been received and forwarded *via* that route, nor is it intended to preclude the Niagara frontier, by the lines controlled and operated by them between the Detroit, St. Clair and Niagara rivers, nor is it intended to preclude the Central Vermont Co. from forwarding or receiving traffic by the water and rail lines *via* Ogdensburg."

"The price realized for the stock sold is not known, but an official of one of the roads in the Central's system says he understands that the stock went to pay a traffic balance due the Grand Trunk. The mutual restriction clause above quoted will prevent the Grand Trunk from sending its western traffic to New England *via* Groveton Junction and the Boston & Lowell, which the Central greatly feared might be done, and on the other hand it will prevent the Central from connecting with the Canadian Pacific, which the Grand Trunk has stood in fear."

Centralia & Chester.—Surveys have been begun on this projected line, which is to run from Centralia, Ill., on the Illinois Central road, to the Mississippi River at Chester.

Chicago, Burlington & Quincy.—This company, it is stated, is making arrangements to build two branches or extensions of its Nebraska line in the spring. The first of these will start from Elwood, the terminus of the Holdredge branch, and run toward the Platt River, a distance of 70 miles. This branch is intended to open up a new country, into which settlers are already moving. The other branch is to run from Fairmont, on the main line, to Geneva in Fillmore County, and will be about 10 miles long.

The statement for October and the ten months to Oct. 31 is as follows:

	October.	Ten months.
Passenger.....	1885. \$558,285	1884. \$571,543
Freight.....	2,183,617	1,942,730
Mail, etc.....	116,356	169,324
Total.....	\$2,858,258	\$2,083,597
Expenses.....	1,190,648	1,177,681
Net earnings.....	\$1,667,610	\$1,505,936

\$10,117,346 \$10,222,039

The large increase in operating expenses since January, more than offsetting the handsome increase in gross earnings, is not officially explained, but is presumably due to making many improvements which are often charged to improvement account.

Chicago, St. Paul, Minneapolis & Omaha.—A dispatch from Madison, Wis., Dec. 3, says: "An important case was called to-day in the United States Circuit Court, before Judges Gresham and Bunn. The Farmers' Loan & Trust Co., of New York, sues the Chicago, St. Paul, Minneapolis & Omaha Co. to subject the land grant, which formerly belonged to the Chicago, Portage & Superior Railway Co. to the lien of \$758,000 of the mortgage bonds of the last named company, which were secured on the land grant before it was taken from it by the Wisconsin Legislature, in 1882, and given to the Omaha Co. The bonds and accumulated interest now amount to about \$1,000,000. The lands comprise 400,000 acres in Northern Wisconsin, and are thought to be worth about \$3,000,000."

"The alleged grounds for relief are that when the Legislature passed the act of forfeiture the Portage Co. was building the land grant division, and could easily have completed it within the time named on the grant but for this hostile legislation, which legislation is therefore held to be unconstitutional, null and void. A further ground is that the Omaha Co. is alleged to have bribed officers of the Portage Co. to betray their trusts and destroy the resources of the Portage Co. by hindering its completion of the land grant division and by procuring this adverse legislation. The case comes up on demurrers to the bill, which will be argued this week."

Cincinnati, Hamilton & Dayton.—Holders of guaranteed trust certificates are notified to leave them with the Master Commissioner to be exchanged for Cincinnati, Hamilton & Dayton Railroad Co.'s stock, in accordance with the decree of the Superior Court of Cincinnati.

Cincinnati, Indianapolis, St. Louis & Chicago.—This company's statement for October and the four months of the fiscal year from July 1 to Oct. 31 is as follows:

	1885.	1884.	Inc. or Dec.	P.c.
Earnings.....	\$220,266	\$241,145	D. \$20,879	8.7
Expenses.....	125,569	149,858	D. 24,289	16.2
Net earnings.....	\$94,697	\$91,287	I. \$3,410	3.7
Charges.....	50,000	50,000		
Surplus.....	\$44,697	\$41,287	L. \$3,410	8.3
Surplus to Sept. 30.....	94,990	121,914	D. 26,945	22.1
Total, 4 mos.....	\$139,696	\$163,231	D. \$23,535	14.4

The charges include the proportion for the month of all interest and rentals accruing.

Cleveland, Youngstown & Pittsburgh.—The United States Circuit Court at Columbus, O., has decided that the claims of Carnegie Brothers, of Pittsburgh, and others, for material and labor furnished, are prior to the lien of the first mortgage on the road. These claims amounted to about \$300,000. The Central Trust Co., of New York, trustee under the mortgage, has taken an appeal to the Supreme Court from this decision.

Columbus & Maysville.—This road, which extends from Hillsboro, O., to Sardinia, 17 miles, has been sold for \$70,000 to a syndicate of Eastern parties, who agree to put the road in good condition and to extend it southward about 25 miles to Aberdeen, on the Ohio River, and also northward from Hillsboro to Washington Court-House, about 25 miles. The road, which is of 3-ft. gauge, has hitherto been operated as a branch of the Cincinnati & Eastern.

Concord.—As noted last week, the contract between this company and the Boston & Lowell, which would have expired according to previous notice on Dec. 1, has been renewed, with some slight modifications. It is said that under the new contract the Boston & Lowell Co. will be released from the operation of the Nashua, Acton & Boston road, and that the unprofitable line will be restored to the Concord Co.

Connecticut River.—This company gives notice of its intention to ask authority from the Massachusetts Legislature to purchase the Ashuelot road, which it has leased for a number of years, and will also ask authority to increase its capital stock by \$300,000 for the purpose of making this purchase by exchanging this stock for that of the leased road. The Ashuelot road extends from South Vernon, N. H., to Keene, and is 24 miles long.

Denver & Rio Grande Western.—The following statement is made for October and the four months from July 1 to Oct. 31:

	October.	1885.	1884.	Four months.
Gross earnings.....	\$126,882	\$91,300	\$411,447	\$290,476
Expenses.....	66,703	63,690	239,238	266,922
Net earnings.....	\$60,179	\$27,603	\$172,209	\$32,554

After deducting rental of equipment, taxes and insurance, the net surplus of the month was \$54,680, against \$21,715 in the same month of 1884. Both this road and the Denver

& Rio Grande have had unusually large earnings lately, owing to the heavy tonnage of coal which they are temporarily supplying to the Union Pacific.

Dublin & Wrightsville.—Track on this Georgia road is now completed from Wrightsville, the terminus of the Tenuille & Wrightsville road, to Benton, in Johnson County, 11 miles. Grading is in progress for 8 miles further to Dublin, which is to be the terminus of the road.

Eastern.—There has been quite a sharp discussion in regard to the annual election, which took place this week, and circulars have been issued by both parties. It will be remembered that in this company the stockholders elect only three of the nine directors, the bondholders choosing the other six. One party has issued circulars, urging the re-election of the present directors, claiming that their management has been judicious and for the benefit of the company; while the other party has issued circulars to the bondholders, urging that they elect directors who will act exclusively in their interest and claiming that the management of the present board has been in the interest of the stockholders as opposed to that of the bondholders.

Fairmont, Morgantown & Pittsburgh.—The grading of this road is now completed from Fairmont, W. Va., northward to Morgantown, 25 miles. Track laying is in progress, and the rails are reported down to Little Falls, 14 miles from Fairmont.

Fremont, Elkhorn & Missouri Valley.—The track on the Black Hills line of this road is now completed to Buffalo Gap, Dak., 52 miles northward from the late terminus at Chadron, Neb., and 495 miles from the starting point of the road at Missouri Valley, Ia. The grading from Buffalo Gap into the Black Hills country will be continued as long as the weather will permit, with the intention of completing the road early in the spring. The final terminus in the Black Hills has not yet been decided upon, as the engineers have not definitely determined whether the road can be carried directly into Deadwood or not.

Hanover Junction, Hanover & Gettysburg.—This company has recently completed and commenced operating an extension of 8 miles of its road running from Gettysburg, Pa., southwest to Ortanna. This extension is built on the line of the old Tapeworm road, which was graded by the state many years ago.

Hutchinson, Glencoe & Southern.—This company has filed articles of incorporation to build a railroad from Hutchinson, Minn., to Glencoe and thence southward to the Iowa line. The principal office of the company is to be in Glencoe, Minn., and its capital stock is fixed at \$500,000.

Indiana, Alabama & Texas.—Track is now laid on this road to Newstead, Ky., 30 miles north by west from the starting point at Clarksville, Tenn. Grading is in progress toward Princeton, Ky., and is completed for nearly 10 miles from Newstead.

Iron.—A meeting of the stockholders of this company was held in Boston last week to consider an offer made by the Cincinnati, Hamilton & Dayton Co. to purchase the road for \$480,000, payable in 5 per cent. mortgage bonds to be issued on the property. The Iron Railroad is 23 miles long, running from Ironton, O., on the Ohio River, northward. It was purchased some years ago by the Toledo, Cincinnati & St. Louis Co., but was subsequently foreclosed and bought in by the bondholders, who organized the present company. It has always been a profitable property, serving a number of coal and iron mines. Under the present organization the company has \$600,000 capital stock and no funded debt. At the meeting the only point discussed was the question of placing some limitation upon the amount of bonds to be issued on the property, some of the stockholders holding that the issue should be limited to the \$480,000 purchase money, while others held that the purchaser might be authorized to issue \$120,000 additional for the purpose of making improvements and addition to the property. It was finally voted to refer the whole matter to a committee, with full power to act.

Kings County Elevated.—Mayor Low and City Works Commissioner Freeman, of Brooklyn, have given consent to the Kings County Elevated Co. to build its structure on Fulton street, from Hudson avenue to the Brooklyn city line. The consent of the owners of half the property along the route has been secured, and have been verified by the Corporation Counsel. The conditions under which the consent of the city officials is given are that the company must operate its structure on this route, whether it is extended to the bridge and ferry or not; a bond of \$200,000 to protect the city against damages must be given; the structure must be begun and finished promptly, and the fare must be 5 cents at all hours, in lieu of paying the city 2 per cent. of the gross receipts, and in waiver of the charter right to charge 10 cents except in the busy morning and evening hours. The company has agreed to all these conditions, and work upon the structure will begin shortly. The company is trying to get the consent of half the property owners on Fulton street, from Hudson to Myrtle avenue.

Long Island.—The employés of this road are to be formed into a mutual benefit association on a plan somewhat similar to that of the Baltimore & Ohio Relief Association. They will be assessed from 50 cents to \$1 per month, according to the amount of their salaries, and will receive from the fund so provided benefits in case of death or sickness, in proportion to the amount paid in. The company will contribute \$10,000 to the fund.

Marietta & North Georgia.—A bill has been filed by certain of the stockholders of this company asking for an injunction against the present company and for the appointment of a receiver. The stockholders who bring the suit were the original owners of the line and built the road from Marietta, Ga., northward to Canton, 25 miles. Being unable to continue the work they sold out the road to Messrs. Kinney & Eger, of Cincinnati, who have since controlled it. They now claim that they have not received stock or bonds of the company as agreed upon at the time of the transfer, and in other respects the purchasers have not carried out their contract. The road is now in operation from Marietta to Elijah, 70 miles, and is nearly completed for some 10 miles further.

Marshall & Northwestern.—Grading on this road is now well advanced toward Gilmer, Tex., 40 miles from Marshall, and tracklaying, which was some months ago completed for 10 miles from Marshall, has been resumed. The road has been finally located through Gilmer and Winnboro to Paris, 120 miles from Marshall.

Mexican Central.—A meeting of the directors was held in Boston last week to consider the question of payment of the January interest. The action then taken has not been made public, but it is reported that a plan was adopted which will shortly be presented to the bondholders under which the holders of first mortgage bonds will be asked to accept for the present 4 per cent. interest, instead of 7, a provision being made that all the net earnings of the road shall be applied to the payment of interest, and that the bondholders shall receive such an amount above 4 per cent. as the net earnings of the road may warrant.

This company's statement for October and the ten months to Oct. 31 is as follows:

	1885.	1884.	Ten months.
Earnings.....	\$249,883	\$394,009	\$2,900,382
Expenses.....	175,610	179,740	1,702,141

Net earnings..... \$74,273 \$124,269 \$1,198,241 \$298,787

The large decrease for the month of October is accounted for by the heavy washouts that occurred in that month, and the repairs of which came largely into the operating expenses of the month. The latter, however, in spite of this fact, show something of a decrease.

Michigan & Ohio.—The United States Circuit Court in Detroit has granted a decree of foreclosure and sale against this road. The decree requires the company to pay all overdue interest on the bonds within 30 days from Dec. 4, and, in case such payment is not made, directs the Master to sell the road at public sale, after advertising for not less than 60 days. Mr. William S. Goodspeed is appointed Master to execute the decree, and is directed to receive no bids less than \$1,000,000. The road extends from Dundee, Mich., to Allegan, 133 miles, and its trains have the Toledo, Ann Arbor & North Michigan track from Dundee to Toledo. O. The amount of the mortgage under the decree of foreclosure as granted is \$2,700,000. The road has been in the hands of the Receiver for some time.

Montague & Southwestern.—Surveys are now being made for this new road, which is to run from Montague, Tex., to a junction with the Fort Worth & Denver road at Brushy Mount, a distance of about 12 miles.

New York, Fordham & Bronx.—This company has been organized to build an extension of the Manhattan Elevated system north of the Harlem River. The organization is made under charter for a suburban line granted by the Rapid Transit Commission several years ago. The proposed line is from the terminus of the Second avenue elevated line at the Harlem River to Fordham, and thence to the Bronx River, a little south of Williamsbridge, with a branch through Morrisania to the Harlem River near its mouth. From the starting point to the grounds of St. John's College at Fordham the line will be elevated, but from that point to the northern terminus it will be a surface road. It is announced that construction will be begun early in the spring. The directors are all connected with the Manhattan Elevated Co.

New York, Lake Erie & Western.—On Jan. 1 next this company will adopt the uniform code of hand, lamp, whistle and bell cord signals which was adopted and recommended by the General Time Convention a year ago. The Erie is the principal company which has heretofore held out against the adoption of this code of signals. The necessary instruction has been issued to trainmen, and they will all be provided with the signal code in order that they may have abundant time to learn the new signals before they come into use.

The company's statement for October, the first month of the fiscal year, is as follows, the figures including 68 per cent. of the earnings and all the working expenses of the leased New York, Pennsylvania & Ohio road:

	1885.	1884.	Increase.	P.c.
Earnings.....	\$1,080,648	\$1,867,857	\$112,791	6.0
Expenses.....	1,306,238	1,240,015	66,223	5.3

Net earnings..... \$674,410 \$827,842 \$46,568 7.4

The statement for the Erie lines proper (excluding all earnings and expenses of the leased road) is as follows:

	1885.	1884.	Increase.	P.c.
Earnings.....	\$1,021,737	\$1,511,158	\$112,579	7.5
Expenses.....	951,102	932,467	18,605	2.0

Net earnings..... \$672,635 \$579,661 \$93,974 16.2

A comparison of these statements shows that this year the 68 per cent. of the gross earnings of the leased line amounted to \$356,911, and its working expenses to \$355,136, showing a profit of \$1,775 for the month, against a similar profit of \$49,181 for October of last year.

New York & New England.—The floating debt of this company has now all been settled with the exception of \$191,000 of car trust certificates. The directors have authorized counsel to apply to the Court for the discharge of the receiver and the restoration of the property to the company, the company being prepared to assume any remaining indebtedness of the receivership. There seems to be no doubt that the necessary order will be granted.

New York, Providence & Boston.—At the annual meeting in Providence, Dec. 9, there was a lively discussion, and a committee was appointed to investigate the company's affairs.

New York, West Shore & Buffalo.—The Supreme Court at Newburg last week confirmed the Referee's report in relation to the sale of this road. The Referee recommended that the purchasers be required to assume \$2,000,000 equipment lease warrants and to deposit \$500,000 with the Court to meet claims still in litigation; and also that the purchasers be required to pay or provide for the receivers' debts and other prior liens, amounting to \$6,519,197.

The suit to enjoin this transfer of the road to this New York Central Co. under lease was closed in the Supreme Court, in Syracuse, Dec. 5. The case did not come to a decision, the plaintiffs to the suit agreeing to withdraw all litigation. This suit, it will be remembered, was begun by parties who held 329 shares of New York Central stock and who presented a formal protest against the ratification of the West Shore lease at the New York Central special meeting. Their reason for withdrawing the litigation has not, of course, been made public, but it is understood that the plaintiffs sold their stock at figures which report places very high.

As soon as the papers in the settlement of the suit were filed in Syracuse the transfer of the road proceeded without delay, the sale having been already confirmed by the court, as noted above. Messrs. Depew, Green and Morgan, the purchasers, at once completed the purchase of the road by the payment of the remainder of the \$22,000,000 of purchase money to the Referee, as directed by the court. As soon as this formality was completed and the deed of conveyance prepared, the purchasers conveyed the property to the West Shore Railroad Co., a new organization which had formed in readiness for the transfer and which had on the same day filed its articles of incorporation in Albany, and Mr. Depew, as representative both of the new company, of the purchasers and of the lessee, received formal possession of the property from the Receivers, giving them the necessary receipts. The new West Shore Co. at once took the necessary action for the issue of its stock and bonds in accordance with the agreement of reorganization and made all necessary arrangements for the execution of the lease of the road to the New York Central & Hudson River Co. That company, as lessee, appointed Mr. Layng, who had been General Manager under the Receivers, General Manager under the lease, so that he remains in charge of the road, as General Manager for the New York Central & Hudson River Railroad Co., lessees. All the necessary formalities were gone through with and the transfer effected so quickly that they were not generally known in New York until everything was completed, this action being doubt-

less taken to prevent the obtaining of another speculative injunction.

The official order of the Receivers is as follows, dated Dec. 5: "The property heretofore known as the New York, West Shore & Buffalo Railway having been sold under foreclosure and conveyed to a new organization known as the West Shore Railroad Co., and the West Shore Railroad Co. having leased its road with all the property connected therewith to the New York Central & Hudson River Railroad Co., the property heretofore in possession of the Receivers is hereby delivered to the New York Central & Hudson River Railroad Co., lessees. All officers and agents heretofore acting for the Receivers will terminate their services under the Receivers as of this date."

On the same date Mr. Chauncey M. Depew, as President of the New York Central, issued the following: "The New York Central & Hudson River Railroad Co. having this day leased the West Shore Railroad, with all the property connected therewith, hereby assumes possession of the same of this date. Mr. G. D. Layng is hereby appointed General Manager of the leased road."

This was immediately followed by the subjoined order from Mr. Layng: "Having been appointed General Manager of the New York Central & Hudson River Railroad Co., lessee West Shore Railroad, to take effect this date, the position is hereby assumed. All officers, agents, and employees of the said railroad heretofore in the service of the Receivers of said property will continue in the service of the lessee in the positions occupied by them under the Receivers until further advised."

Norfolk & Western.—This company gives notice that holders of South Side mortgage bonds maturing on Jan. 1 next, will have the option of extending their bonds until July 1, 1900, with interest at the rate of 5 per cent. Holders who do not wish to extend their bonds will receive payment in cash at the office of E. W. Clark & Co., in Philadelphia, who have agreed to purchase all the bonds not extended.

Ogdensburg & Lake Champlain.—This company's statement to the New York Railroad Commission for the quarter ending Sept. 30 is as follows:

	1885.	1884.	Inc. or Dec.	P. c.
Earnings.....	\$159,701	\$182,735	D. \$23,034	12.0
Expenses.....	76,267	93,406	D. 17,139	18.4
Net earnings.....	\$83,434	\$89,329	D. \$5,895	6.6
Income, other....	4,138	5,410	D. 1,272	23.6
Total net.....	\$87,572	\$94,739	D. \$7,167	7.5
Total deductions.....	59,835	74,600	D. 14,765	10.7
Balance, surplus..	\$27,737	\$20,130	I. \$7,598	37.9

The deductions include interest, taxes and rentals, giving the proportion of the yearly amounts chargeable to the quarter.

Ohio & Mississippi.—This company's statement for October and the ten months to October 31 is as follows:

	October	Ten months.
Earnings.....	1885. \$365,603	1884. \$334,880
Expenses.....	238,882	240,630

Net earnings..... \$126,621 \$114,250 \$854,327 \$668,318

For the ten months the gross earnings decreased \$79,102, or 2.5 per cent., and the expenses \$265,111, or 10.7 per cent., leaving a gain of \$186,009, or 27.8 per cent., in net earnings.

A meeting of Springfield Division bondholders will be held in Baltimore, Dec. 22, to consider the company's proposal to exchange their present bonds for new 5 per cent. bonds, secured on the main line.

Oregon Improvement Co.—The net earnings of this company for October were \$105,737. For the eleven months of the fiscal year, from Dec. 1 to Oct. 31, the net earnings were \$579,169, being a decrease of 21 per cent. from last year.

Oregon Railway & Navigation Co.—The grading on the new branch of this company's line from Starbuck, Ore., to Pomeroy, is now completed for about 20 miles.

Tracklaying is in progress, and at latest accounts rails had been laid for 8 miles from Starbuck.

Oregon & Transcontinental Co.—It is reported that this company had renewed its loan, which falls due next month, on advantageous terms. The precise terms have not been made public, but it is reported that the company borrows \$9,000,000 for three years at 5 per cent., the loan to be secured by the same collateral as the former one, and be subject to redemption at the end of one or two years, at the company's option.

Palatka, Ocala & Homosassa.—This company has been incorporated to build a railroad from Ocala, Fla., through Homosassa to Brookville.

Philadelphia & Reading.—The Receiver's cash accounts, as audited by the Master, are as follows for October:

	Railroad Co.	Coal & Iron Co.
Cash on hand, Oct. 1.....	\$376,092	\$1,450
Receipts.....	3,246,843	1,861,447
Total.....	\$3,582,935	\$1,862,897
Payments.....	3,237,693	1,859,990
Balance, Nov. 1.....	\$345,242	\$2,907

The proposed plan of reorganization meets, apparently, with little favor anywhere, new opposition having been developed in various quarters, among different classes of security holders.

Pittsburgh, Marion & Chicago.—This company has filed articles of incorporation in Ohio to build a railroad from Marion, the eastern terminus of the Chicago & Atlantic road, by the most direct practicable line to Pittsburgh. It is intended, apparently, to be an extension of the Chicago & Atlantic road, and to give that road an outlet eastward independent of the Erie, which is now its only connection for through business.

Richmond, Fredericksburg & Potomac.—This company will receive bids for building a passenger station at Seventh and Canal streets in Richmond, Va. The bids will be opened Jan. 4 next. The house will be 140 by 90 ft., two stories in height, to be built partly of granite and partly of brick, trimmed with Seneca stone and terra-cotta, and will have a slate roof. Plans and specifications may be seen at the company's office in Richmond, and further information may be obtained by applying to W. B. Powell, architect, Philadelphia; H. Walters, General Manager Atlantic Coast Line, Wilmington, N. C., or E. T. Myers, General Superintendent of the road at Richmond.

Rome, Watertown & Ogdensburg.—This company's engineers have completed a survey for a branch from Norwood, N. Y., to Massena, a distance of 12½ miles. The work on this branch will be very light. At Massena it will connect with the Massena Springs & Fort Covington road, which is now under construction.

Rutland.—It appears that the dispatches announcing that the Vermont Supreme Court had decided that this company

was liable for the stock fraudulently overissued by the late Treasurer Haven, were not correct. The suit in question was one brought by the firm of Clement & Sons on certain certificates of stock, which the company claims were part of the overissue, and the decision which was really given by the Court was that the particular certificates of stock involved in the suit were legal and valid. The decision related only to these certificates, and the Court gave no opinion on the question as to whether the company was liable for the overissued stock. That question is still to be decided, and is one of considerable interest. It has now been settled that the overissue amounts to 2,391 shares, but Haven so managed the business by cancelling old certificates and issuing new ones that it will be a matter of very great difficulty to ascertain what stock is legal and what is part of the overissue.

Saginaw, Tuscola & Huron.—A contract has been let to Mr. M. Lalley, of East Saginaw, Mich., for grading the extension of this road from its present terminus at Bay Port, Mich., to Bad Axe, a distance of about 20 miles. The grading is to be carried on as much as possible through the winter, with the intention of completing the road in the spring.

San Antonio & Aransas Pass.—Track on this new road is now reported laid to Floresville, Tex., 31 miles west from San Antonio. Grading is now in progress on a second section, and it is thought contracts for the whole line to Aransas Pass will be let before long.

Saratoga & Almaden.—The grading of this road is now nearly completed from Murphy, Cal., on the Northern Division of the Southern Pacific road, to Saratoga, 10 miles. Tracklaying is in progress, and at latest reports the rails were down for 3 miles from Murphy. The road is intended to run to the quicksilver mines at New Almaden.

Sinemahoning Valley.—This road is to be opened for business Dec. 4, when regular trains will be put on. It is 9 miles long, extending from Keating Summit, Pa., on the Buffalo, New York & Philadelphia road, to Austin, and has been built chiefly to carry lumber.

Union Pacific.—A dispatch from Helena, Mont., says that the company's engineers have received orders to resume work on the extension of the Montana Division from Dillon to Helena, with the intention of completing the road in the spring.

The company makes the following statement for October and the ten months to Oct. 31:

	October	Ten months.
Earnings.....	1885. \$2,768,627	1884. \$2,649,214
Expenses.....	1,444,644	1,248,208

Net earnings..... \$1,323,983 \$1,401,006 \$7,818,624 \$8,497,203

In the summer months when working expenses were very high, it was officially explained that large expenditures were being made for repairs of roadway which would be reduced after August.

Wabash, St. Louis & Pacific.—The United States Trust Co., of New York, trustees under the first mortgage on the Omaha Division, has filed a cross petition in the foreclosure suit, asking the court to order the Receivers of the Wabash road to turn over the line in question to receivers to be appointed in accordance with the suits for foreclosure of the mortgage, which have already been begun by the trustees.

Western Union Telegraph.—This company reduces its quarterly dividend from 1½ to 1¼ per cent. The statement given out is as follows:

Surplus on Oct. 1, 1885..... \$4,230,959
Estimated..... 1,250,000

Dividend of 1¼ per cent..... \$5,480,959
Interest on bonded debt, etc..... 143,768

Surplus..... \$4,337,191

The statement says: "The estimates of net earnings for the past and present quarters have been materially reduced by extraordinary expenses of cable repairs of both Atlantic and Cuba cables, by large payments of litigation taxes, and for taxes in a number of states, exceeding by \$400,000 the ordinary expenditures."

Wilmington & Weldon.—This company has offered to build a branch from Rocky Mount, N. C., to Nashville, a distance of 9 miles, provided the people along the line will give the right of way and as much timber as may be needed for ties and trestle-work. The offer will probably be accepted.

Wisconsin Central.—Pursuant to the plan of reorganization the 22d coupon on the preferred bonds is now paid. Holders of original first-mortgage bonds, matured 1875, may have them properly endorsed as "unfunded" and secure amount equal to their proportion of coupon on preferred bonds. The company is reported to have secured an entrance to Chicago, but one which will require a heavy expenditure.

Worcester, Nashua & Rochester.—The Massachusetts Supreme Court on Dec. 5 dissolved the temporary injunction restraining this company from distributing to the stockholders the stock held in the treasury. The distribution was made as soon as the notice of the dissolution of the injunction was received.

ANNUAL REPORTS.

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Mobile & Ohio.

This company owns a main line from Mobile, Ala., to East Cairo, Ky., 498 miles; the Columbus Branch, 14 miles; the Starkville Branch, 11; the Aberdeen Branch 9 miles, a total of 527 miles of road, with 56.63 miles of siding. The report is for the year ending June 30. The only change during the year was the addition of 5.54 miles of sidings.

Just after the close of the year the entire line was changed from 5 ft. to 4 ft. 8 1/2 in. gauge.

The equipment consists of 67 locomotives; 36 passenger, 10 baggage and mail & express cars; 950 box, 157 stock, 249 flat, 299 coal and 21 caboose cars; 3 special cars, 11 tool cars and 43 road cars.

The general account, condensed, is as follows:

Stock	\$5,320,600
Funded debt	16,670,000
Accounts, interest, etc.	220,669
Car trust	205,931
Special accounts	363,434
Renewal fund	386,528
Profit and loss	54,023
Total	\$23,221,185
Road and property	\$20,977,988
Land Department	579,063
Sinking fund	407,000
Accounts, interest, etc.	216,546
Car trust	205,931
Special accounts	429,437
Securities in renewal fund	405,220

The funded debt consists of \$7,000,000 first-mortgage bonds; \$1,000,000 extension bonds; \$20,000 wharf bonds; \$5,300,000 first-preferred income and sinking fund debentures; \$1,850,000 second-preferred debentures; \$600,000 third-preferred debentures and \$900,000 fourth-preferred debentures. The debentures receive interest only when earned. Changes during the year are the payment of \$10,000 wharf bonds.

The earnings for the year were:

1884-85.	1883-84.	Inc. or Dec.	P.c.
Freight	\$1,526,494	\$1,712,923	D. \$186,429 10.9
Passage	433,895	413,094	I. 20,801 5.0
Mail and express	87,575	80,487	I. 7,088 8.8
Miscellaneous	53,062	72,413	D. 19,351 26.9
Total	\$2,101,026	\$2,278,917	D. \$177,891 7.8
Expenses	1,574,727	1,547,467	I. 27,260 1.8

Net earnings \$526,299 \$731,450 D. \$205,151 28.0
Gross per m. 3,987 4,324 D. 337 7.8
Net 999 1,389 D. 390 28.0
Per cent of exp. 75.0 67.8 I. 7.2 ...

From the net earnings above are to be deducted \$1,458 commission, etc., leaving a net balance of \$524,841.

The result of the year was as follows:

Net earnings, as above	\$524,841
Balance from previous year	11,582
Total	\$536,423
Interest on bonds	\$432,400
Payment (1 per cent) on first-preferred debentures	53,000
	535,400
Balance	\$1,023

The Land Department reports total receipts of \$46,776, which, with \$43,607 on hand from previous year, made a total of \$90,383. Expenditures were \$54,750, leaving \$35,633 on hand. Payments included the purchase of \$57,000 first-preferred debentures, making \$407,000 now held. The company owned at the close of the year 1,063,881 acres of land.

The traffic for the year was as follows:

1884-85.	1883-84.	Inc. or Dec.	P.c.
Pass. train miles	750,767	474,255	I. 276,512 58.8
Freight "	759,437	805,360	D. 45,923 5.7
Passengers carried	409,391	404,570	I. 4,831 1.2
Passenger-miles	20,197,865	15,267,220	I. 4,930,645 32.3
Tons freight carried	429,141	408,889	I. 20,252 4.8
Ton-miles	89,732,405	87,024,793	I. 2,707,672 3.1
Av. train load:			
Pas.engers, No.	26.9	32.0	D. 5.1 16.0
Freight, tons	118.2	108.0	I. 10.2 9.4
Av. rate:			
Per ton-mile	1.701 cts.	1.968 cts.	D. 0.267 cts. 13.6

The average passenger journey last year was 49.8 miles; the average freight haul 209.1 miles. Passenger-train cars ran 3,524,293 miles and freight cars 17,331,276 miles. The cost of maintenance of passenger cars was 1.487 cents and of freight cars 0.540 cent per mile run. The total locomotive mileage, including switching and service was 2,024,910

miles. Locomotives ran 1.34 miles for each revenue train mile. The cost of locomotive service was 16.8 cents per mile run.

The freight tonnage last year included 198,580 bales of cotton and 51,729 tons of coal, against 228,524 bales of cotton and 13,008 tons of coal in 1883-84.

The most important work done during the year was the change of gauge from 5 ft. to 4 ft. 8 1/2 in. Orders for the change of gauge were given on May 2, and from that date the work of changing the locomotives and cars continued without interruption until July 7. The Cairo Extension was changed about a week before the day fixed for the general change, in order to test the plan and arrangements for the work, and also because of the large proportion of trestle-work on that part of the road. The track from Mobile to Columbus, 472 miles, was changed July 8, and that of the branches on the following day. The labor required to move the rails and to make the track safe for the passage of trains was 1,873 days, or 3,554 days labor per mile. The total cost of the change was \$27.99 per mile, which, of course, does not include the expense of changing the equipment. It was estimated that the total cost of changing the track and equipment would be \$95,777; it will probably, however, be completed for less than \$80,000.

The road has been fully maintained, and there have been laid in the track during the year 6,320 tons of steel rails, making in all 408 miles of the main line now laid with steel. The new rails last year were charged to renewal account.

The increase in local freight traffic was largely due to the shipments of coal received from the Georgia Pacific road. The through traffic south bound was affected by the general demoralization of rates during part of the year, and the amount received from it was much less than it should have been. The increase in passenger traffic consisted entirely in through travel, chiefly to visitors to the New Orleans Exposition, who were carried at extremely low rates. As soon as the Exposition travel was at an end both through and local passenger business showed a great falling off. The increase in expense was mainly due to the running of an additional passenger train and to the payments on account of new equipment.

Western Union Telegraph Co.

The report of this company for the year ending June 30 gives the operations for three years past as follows:

1884-85.	1883-84.	1882-83.
Revenues for the year	\$17,706,834	\$19,632,040
Expenses (including rentals of leased lines and taxes)	12,005,909	13,022,504
Profits	\$5,700,925	\$6,610,436
Disbursements:		
For dividends	\$4,699,325	\$5,509,179
For interest on bonds	495,072	472,350
For sinking funds	30,962	39,091
Total disbursements	\$5,534,380	\$6,011,520
Balance of profits	\$160,536	\$498,916
Surplus July 1 (beginning of year)	\$4,157,469	\$3,658,553
Total nominal surplus June 30 (end of year)	\$4,324,004	\$4,157,460
	\$3,658,554	\$3,658,554

The following statement shows the mileage of lines and wires, number of offices and traffic of the company for each year for six years past:

Miles of poles	and Miles of cables	No. of wires	offices	Messages	Receipts	Profits
Year	887-88	293,354	293,354	9,470	29,315,500	\$12,782,694 9.0
1888-89	110,240	110,240	110,240	11,737	5,305,500	6,506,270
1889-90	181,061	374,398	374,398	12,058	38,842,247	17,114,165 47,186,970
1890-91	144,294	432				

report, to secure which this company holds a lien on his property on Madison avenue, New York, has not been paid, and it has not been possible to sell the property at any price at which it was thought wise to accept.

"Negotiations have been continued and have resulted in a fair prospect of completing a joint lease to the Northern Pacific and Union Pacific companies. Many obstacles and legal difficulties have occurred in connection therewith, but it is hoped that a lease or traffic contract can be devised which will be safe for this company to adopt, and on terms that will be satisfactory to the stockholders."

Old Colony.

This company's lines cover the whole of Southeastern Massachusetts, and extend to the west and north of Boston as far as Fitchburg and Lowell. They are as follows :

	Miles.
Boston to Newport, R. I.	67.79
South Braintree by Middleboro to Somerset Junction	37.60
South Braintree to Plymouth	25.94
Braintree to Cohasset to Kingston	32.36
Cape Cod Line, Middleboro to Provincetown	85.77
Nine short branches and connections	56.47
Northern Division :	
Fitchburg to New Bedford	91.02
Fairhaven to Tremont	15.17
Seven short branches and connections	19.14
Total owned	431.26
Framingham & Lowell, leased	26.12
Fall River Railroad, leased	12.00
Total worked	469.38

This company also owns the Fall River, Warren & Providence road, 5.79 miles, worked separately; trains from its Fitchburg line run over the Boston & Albany track from South Framingham to Boston. It owns a controlling interest in the Old Colony Steamboat Co., whose lines run from Fall River and Newport to New York, and a large interest in the Nantucket & Cape Cod Steamboat Co. The report is for the year ending Sept. 30 last.

The equipment consists of 127 locomotives: 244 passenger, 39 baggage and 49 express cars; 5 milk, 897 box, 32 stock, 639 flat, 66 stone, 1,190 coal and 38 caboose cars; 4 scraper, 4 derrick, 4 tool, 100 gravel and 13 service cars.

The general account is as follows, condensed:

	\$10,845,100
Capital stock	3,520
Boston, C. F. & N. B. stock unconverted	9,473,360
Funded debt	530,068
Bills payable	515,235
Accounts and balances	263,796
Improvement account	762,510
Total	22,694,465
Road and property	\$10,731,402
Old Colony Steamboat Co. stock	725,500
Fall River, War. & Prov. stock and bonds	3,884,653
Lowell & Fram. stock and bonds	444,546
Other stocks and bonds	107,693
Materials	449,034
Accounts receivable	417,198
Cash	170,377
Total	22,394,465

The funded debt consists of plain bonds, \$2,583,900 at 7 per cent. interest; \$3,611,400 at 6; \$1,912,000 at 5; \$616,000 at 4½, and \$750,000 at 4 per cent.

The report says: "As stated in the report for 1882, an option was reserved to purchase all the land of the South Boston Iron Co. adjoining the railroad in South Boston at \$2 per square foot. As a large reduction in the price (\$61,000) was offered in case the company should elect to complete the purchase at once, the directors deemed it wise to do so, and have purchased the entire property (223,093 square feet) for \$210,197, subject to a mortgage for \$175,000, due Feb. 25, 1888, paying in notes of the South Boston Iron Co. \$160,000, and in cash \$50,197. The property, until needed for the uses of the railroad, is leased to the South Boston Iron Works Co. at a fair rental."

"During the year the directors, under the authority conferred by the stockholders, have sold \$250,000 of bonds, bearing interest at the rate of 4 per cent., and due in 20 years from date, at a premium of 1 per cent. Out of the proceeds, \$100,000 of bonds of the Agricultural Branch Railroad Co. have been paid. They have also sold 4,000 shares of the capital stock for \$637,250. The premium on bonds and shares has been added to the improvement account."

Charges to construction and property account for the year were \$708,923, the chief item being \$210,197 for the South Boston property and \$480,201 for new second track.

The improvement account for the year was as follows:

Balance, Oct. 1, 1884	\$160,853
Premiums on stock and bonds sold	239,750
From earnings account	25,250

Total	\$425,853
Payments during the year	162,057

Balance, Sept. 30, 1885.	\$263,796
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The payments were \$62,344 for new stations; \$20,062 for new engine house at New Bedford, and \$79,651 for new equipment.

The earnings for the year were:

1884-85.	1883-84.	Inc. or Dec.	P. c.
Passengers	\$2,229,061	\$2,188,197	I. \$41,764 1.9
Freight	1,764,389	1,741,860	I. 22,529 1.3
Mail, etc.	176,505	164,538	I. 11,969 7.3
Rents, etc.	80,391	67,277	D. 16,046 16.1
Total	\$4,251,186	\$4,181,872	I. \$59,314 1.4
Expenses	2,970,130	2,895,309	I. 74,761 2.6

Net earnings	\$1,281,056
Gross earn. per m.	9,064
Net	2,732
Per cent. of exps.	69.9

Expenses include taxes, which amounted to \$236,948 last year and \$199,363 in the preceding year.

The result of the year was as follows:

Net earnings, as above	\$1,281,056
Interest accrued	\$551,424
Less interest and dividends received	79,334

Balance of interest account	\$472,909
Rentals	45,504
Dividends, 7 per cent	738,122

1,255,806

Balance, credited to improvement account \$25,250

There were 7,624 tons of steel rails and 230,267 sleepers used during the year, of which 2,458 tons of rails, 83,998 sleepers were laid in the new second tracks, and the balance in repairs. The work upon new stations commenced last year has been continued. Large additions have been made to the equipment during the past year: 10 locomotives, 8 passenger cars, 2 parlor cars, 2 baggage cars and 49 freight cars have been purchased or built in the shops. The convenience and comfort of the new cars make travelers dissatisfied with the old ones, and it will be necessary to add considerably to the passenger equipment at an early day.

New interlocking signals have been placed at the crossing

of the Woonsocket Division of the New York & New England road at Medfield, which will avoid the necessity of stopping all trains at this crossing. Nine new iron bridges have been substituted for wooden bridges.

The traffic for the year was as follows:

Train miles:	1884-85.	1883-84.	Inc. or Dec.	P. c.
Passenger	1,700,907	1,629,344	I. 21,653	4.4
Freight	719,689	709,610	D. 79,921	10.0
Other	933,438	695,020	I. 238,418	34.2
Total	3,354,124	3,123,974	I. 230,150	7.4
Passenger carried	8,320,874	7,826,501	I. 494,373	6.3
Passenger-miles	124,174,681	116,745,901	I. 7,428,780	6.4
Tons freight carried	1,092,125	1,507,048	I. 95,077	5.9
Ton-miles	60,134,191	57,809,872	I. 2,234,319	3.8

Av. train load:

Passenger, No.	73.1	71.6	I. 1.5	2.1
Freight, tons	83.6	72.4	I. 11.2	15.5

Av. rate:

Per passenger-mile	1.70 cts.	1.87 cts.	D. 0.17 cts.	I. 9.0
Per ton-mile	2.90 "	3.00 "	D. 0.10 "	I. 3.2

The report says: "The consolidation with the Lowell & Framingham Railroad Co. has not yet been fully completed. On Sept. 30, 1885, the Old Colony Railroad Co. held \$416,000 of the first-mortgage bonds of that company, for which it had issued to the holders the same amount of its own bonds, bearing interest at the rate of 4½ per cent., and running 20 years, and nearly all the preferred and common stock of the Lowell & Framingham Railroad Co. had been transferred to Messrs. Ames and Rotch, as trustees, under the terms of the agreement for consolidation. For the remaining bonds outstanding, upon which the interest due Oct. 1, 1885, has not been paid, the directors have offered bonds of the Old Colony Railroad Co. bearing 5 per cent. interest and due April 1, 1891. At the date of the printing of this report, Oct. 31, \$33,000 have been thus exchanged. It is expected that the consolidation will be fully consummated early in the coming year. The interest on the bonds exchanged as above stated and the dividends upon receipts given stockholders of the Lowell & Framingham Co. have been charged in the accounts as rent of the Lowell & Framingham road. * * *

"Dividends have been received of 7 per cent. upon the stock of the Union Freight Railroad Co., and of 8 per cent. on the stock of the Old Colony Steamboat Co., which have been credited to the interest account. The New York business has fallen off slightly in amount in consequence of business depression and the new trains added upon the rail lines.

"The second track has been completed upon the old line from Bridgewater to Middleboro, and upon the new line from Randolph to Raynham, and from Weir Junction to Middleboro Junction, and has also been extended from Taunton to Somerset. Upon the Northern Division a second track has been laid from Mansfield to South Walpole, and most of the work has been done to extend it to Walpole Junction, and at the northern end of the road the second track is nearly completed from Pratt's Junction to Leominster, which will probably be extended to Fitchburg by Jan. 1, 1886. The directors have voted to build a second track during the coming year between Sherborn and Marlboro Junction, and upon the South Shore road. The cost of the second tracks, amounting to \$480,201, has been charged to construction. A branch railroad upon purchased land, 3,600 ft. in length, has been built to connect the old line to Fall River with the Bridgewater Branch at a cost of \$12,741."

Memphis & Charleston.

This company owns a line from Memphis, Tenn., to Stevenson, Ala., 272 miles, with 20 miles of branches. Its trains run over the Nashville, Chattanooga & St. Louis track from Stevenson to Chattanooga, Tenn., 38 miles, making 330 miles worked.

The road is leased to the East Tennessee, Virginia & Georgia Co., but its operations are reported separately. The fiscal year ends June 30.

The equipment includes 54 locomotives: 24 passenger, 3 sleeping and 13 baggage, mail and express cars; 698 box, 50 stock, 150 coal, 243 flat and 24 caboose cars; 1 pay car, 1 wrecking car and 1 steam-shovel; 42 hand and 40 push carts.

The general account, condensed, is as follows:

Stock	\$31,312,725
Funded debt	4,528,000
Unpaid interest	80,000
Accounts and balances	448,137
Total	38,258,862
Road and equipment	\$87,653,609
Stocks and bonds	237,756
Sundry accounts	16,457
Cash and accounts receivable	429,505
Profit and loss	423,147
Total	388,758,474

Locomotive service cost 19.027 cents per mile run. Maintenance of cars cost 1.188 cents per passenger-car mile and 0.445 cents per freight-car mile.

During the year 34 miles of steel rails and 149,242 new ties were put in the track. There are now 177½ miles of road laid with steel, leaving 114½ miles laid with iron. During the year 2.9 miles of new sidings were built. A considerable amount of work was done in improving stations, rebuilding bridges, etc.

More freight cars are needed to reduce the payments for car mileage. The company has not a sufficient supply of cars for through traffic in the busy season.

East Tennessee, Virginia & Georgia.

At the close of its last fiscal year, June 30, 1885, this company owned the following lines, owning all of them except as noted below:

	Miles.
East Tennessee Division, Bristol, Tenn., to Chattanooga	242.0
North Carolina Branch, Morristown, Tenn., to Unaka	43.5
Ohio Branch, Knoxville, Tenn., to Jellico	65.5
Ooltewah Cut-off, Ooltewah, Tenn., to Cohutta	11.5
Alabama Division, Cleveland, Tenn., to Selma, Ala.	264.0
Atlanta Division, Rome, Ga., to	